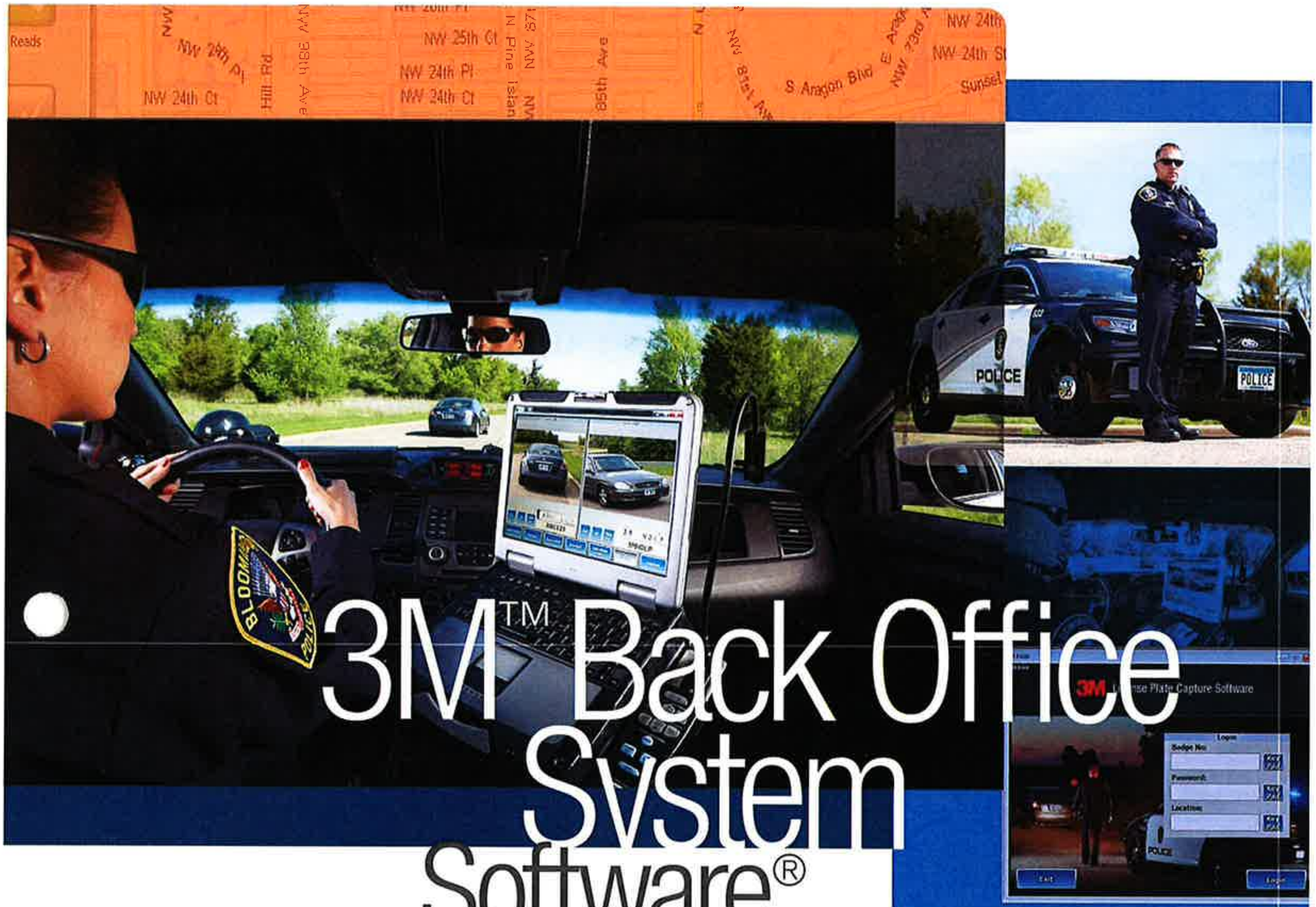
3M Traffic Safety and Security Division
User's Manual



3M™ Back Office System Software®

User's Manual

Version 3.2 or above

3M

Table of Contents

Notices

The information within this manual is authorized for distribution to customers, authorized service center personnel, and distributors of 3M. Every effort has been made to supply correct information. However, 3M assumes neither responsibility for its use, nor for any infringements of patents or other rights of third parties, which may result from its use. No license is granted by the manufacturer under any patent or patent rights. 3M reserves the right to modify and update the equipment at any time without prior notice. No part of this publication may be reproduced, stored in a retrieval system, or transmitted in any form or by any means to a third party without the prior consent of the copyright holder. The manufacturer's warranty will be invalidated if untrained personnel operate the equipment or if any attempt is made to service the equipment by unauthorized personnel.

This manual contains confidential and proprietary information and should not be redistributed except as needed for proper use and maintenance of your system.

Warranty

Warranty and Limited Remedy: 3M warrants that the 3M product will be free from substantial defects in material and workmanship under normal use and service, wear and tear excepted, for twelve (12) months from the date of shipment. For software products, for twelve (12) months from the date of shipment, the software will materially perform the functions described in the accompanying documentation. 3M MAKES NO OTHER EXPRESS OR IMPLIED WARRANTIES OR CONDITIONS, INCLUDING ANY IMPLIED WARRANTY OR CONDITION OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE. If the 3M product does not conform to this warranty, the sole and exclusive remedy is, at 3M's option, repair or replacement of the 3M product or refund of the purchase price.

Limitation of Liability: Except where prohibited by law, 3M will not be liable for any loss or damage arising from the 3M product, whether direct, indirect, special, incidental or consequential, regardless of the legal theory asserted.

Technical Support

Service of this equipment by replacement of parts, on-site repair, or routine maintenance inspections is available. Please contact 3M Motor Vehicle Services and Systems.

Phone: 877-777-3571

Email: ALPRSupportUS@mmm.com

Web: www.3M.com/mvss

Fax: 800-591-9293

3M Center

Building 235-3A-09

St. Paul, MN 55144

Design Changes

3M reserves the right to change the design of any product from time to time without notice and with no obligation to make corresponding changes in products previously manufactured.

Trademarks

The 3M camera series, 3M™ License Plate Capture Software®, 3M™ Back Office System Software®, are registered trademarks of 3M. Windows®, Windows Vista®, Windows 7, Windows 8, Bing®, and Microsoft® .NET are all trademarks of the Microsoft Corporation. Other trademarks and registered trademarks are the property of their respective owners.

Copyright

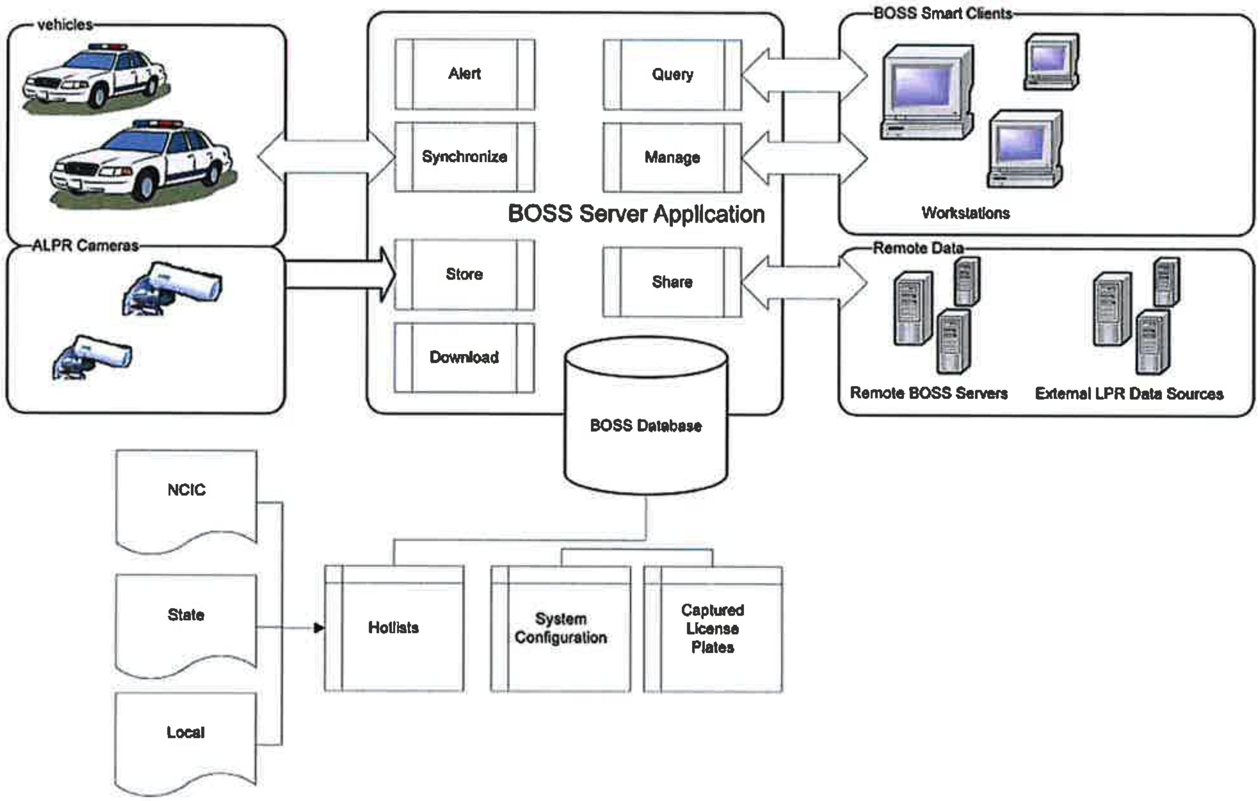
Version

The manual documents the 3.2 series version of the BOSS software. The document was last updated on March 27, 2014.

1 Introduction

This document serves as a user's manual for the 3M Back Office System Software (BOSS) version 3.2 or above and describes the various features and functionality of the application. BOSS is a management and administration tool for the 3M Automatic License Plate Recognition (ALPR; also known as ANPR, or Automatic License Number Recognition) systems. The BOSS server application provides an interface for user maintenance, data queries, import and export of data, and dispatch functions. BOSS lets an Administrator specify the databases used by both mobile and fixed camera installations. BOSS retrieves these databases on a regular schedule; manages the users of the 3M™ License Plate Capture Software (LPCS) systems and BOSS Smart Client workstations; provides a central repository for data collected by mobile LPCS deployments and fixed camera installation; provides reporting and data management tools; provides hit detection and dispatch functions for fixed camera installations; and allows for data mining and data sharing with other agencies.

The following schematic shows how the BOSS server application works together with Smart Client workstations, various data sources, LPCS, and the full line of ALPR cameras to create a comprehensive solution.



1.1 The Design of 3M Back Office System Software Version 3.2 and Above

The design of BOSS version 3.2 or above offers ease of accessibility with a user-friendly look and feel. Large, easy-to-identify icons provide intuitive navigation, and the frequently used elements are readily available. The user interface (UI) is very recognizable and comfortable, particularly for users already familiar with Windows-based applications, including Microsoft® Office software, or the 3M License Plate Capture Software. In addition, users can enter a minimum amount of information to add a data object, with the ability to include more details if needed.

1.2 Organization of This User's Manual

The *3M Back Office System Software, Version 3.2 or above, Software User's Manual* guides BOSS users and Administrators through the following topics:

- Logging In
- Application Layout
- Access Permissions: Users/Groups/Roles
- Devices and Sites
- Data Sharing
- Hotlists
- Hotlist Formatters
- Alerts
- Dispatch
- Querying Stored Data
- Reports
- Client Tools
- Archiving Data
- System Settings

The appendices provide system requirements for BOSS servers and Smart Client workstations and a guide to installation and configuration. Additional appendices cover troubleshooting and BOSS plug-ins. A glossary of commonly used terms and acronyms follows the appendices.

2 Logging In

2.1. 3M Back Office System Software Administrator Login

During each new installation of the 3M Back Office System Software, a default user of "admin" is created, with the password of "admin1." The installer or designated BOSS Administrator can log in with this account to create additional users and otherwise configure the system. It is important that the "admin" password be changed in order to protect the system's security. Likewise, it is equally as important to keep this and all passwords confidential in order to protect the security of the BOSS system. Section 17, Installation and Configuration, offers more information on setting up users and passwords.

2.2 User Logins

The 3M Back Office System Software will require a user to log in with a username and password only if there is no BOSS user matching the current Active Directory user login. In other words, if the username currently logged into Windows matches a username in the BOSS system, the user is automatically logged into the application when it is started, and no login screen will appear.

For example, if user "bsmith" is logged in using Windows Domain Authentication through Active Directory ("logged into Windows"), when the BOSS Smart Client is started, and a "bsmith" user exists within the BOSS system, no login screen will appear; the application will authenticate the user and load automatically. If a user logs onto Windows with a name that is not an exact match to a username in the BOSS system, or is not logged into the same Windows Domain, a login screen will appear. The user will then need to enter a correct BOSS user name and password in order to enter the application.

Note: In order for a user to be automatically logged into BOSS, the Active Directory user must be in the same Windows domain as the 3M Back Office System Software server.

2.3 Login Dialog

1. Enter your username in the Login field.
2. Enter the correct password in the Password field. **Note:** Passwords are case sensitive.
3. Click **OK** to complete the login process.

2.3.1 Storing Username and Password

Select the **Remember my password** option to save the password to the computer's local Windows registry and automatically fill in both Login and Password fields on subsequent logins.

Selecting this option only remembers the login information for the current Windows User on the local computer. It will not apply to a different Windows user logged in the same computer and will not apply to the same user logging in a different computer. This option need not be checked every time. Once checked, the option will stay that way until it is deselected during a login.

Note: The username and the password are stored in the Windows Registry. This can be a security risk. It is recommended that you not use the **Remember my password** option unless the Windows workstation can be secured against unauthorized access.

2.3.2 BOSS Client Connection Settings

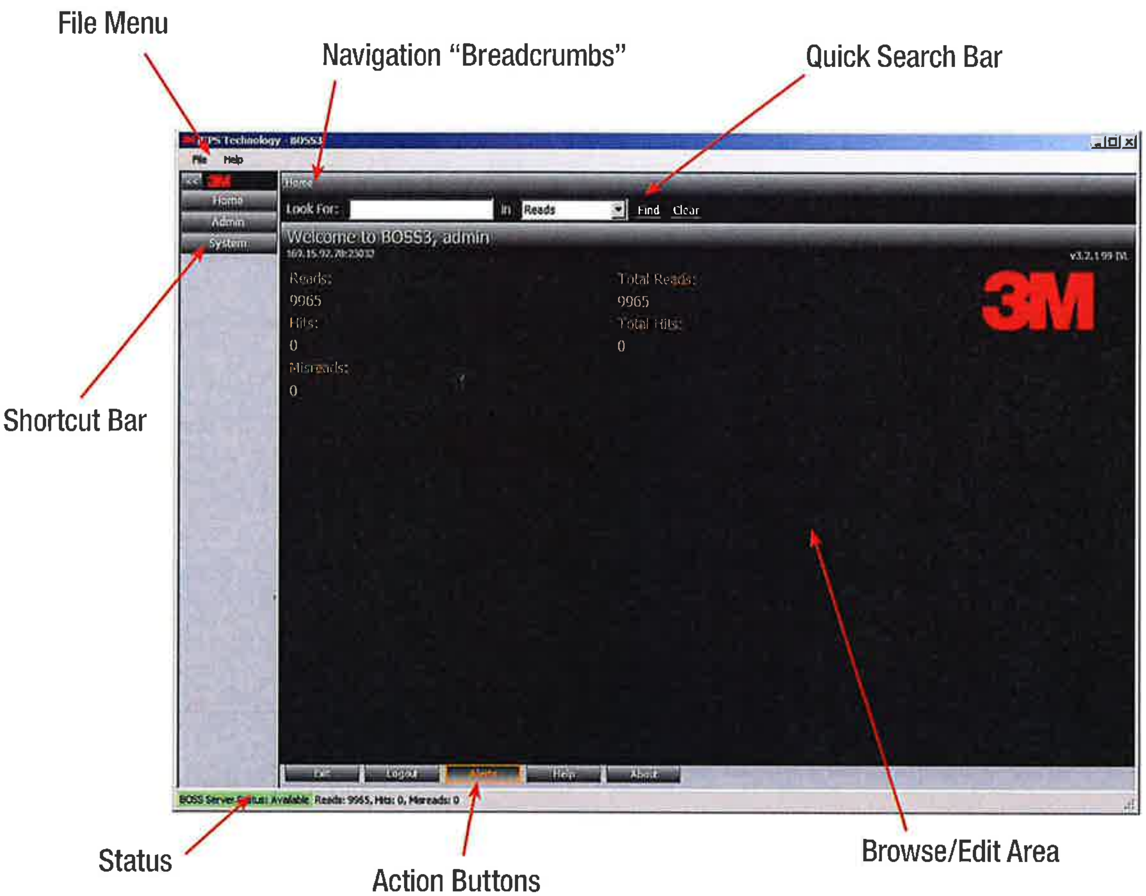
Click the **BOSS Server** button on the Login screen to view or change the client connection settings.

Server – IP address, computer name, or DNS address can be used in the Server field as long as the client can reach the server using the value entered.

Port – The default port used for connecting to the BOSS server is 23032. This should only be changed here if the BOSS server has been configured to use a non-default port.

3 Application Layout

3.1 Components of the BOSS Application Screen



File Menu – The File menu of the application resides in the very top left of the application window. The File menu is always visible and available regardless of the screen or shortcut selected. The **Exit** option is available through this menu.

Navigation – The navigation "breadcrumbs" appear at the top of the BOSS screen as different actions are selected. By clicking on the links it is possible to backtrack to a previous screen.

Shortcut Bar –The Shortcut bar (the panel on the left of the screen) contains icon buttons for the various operations available. The shortcut icons are divided into three categories: **Home**, **Admin**, and **System**. Each time the application is started, all of the categories are closed with no shortcuts displayed. Click on any of the three headings to access the shortcuts within that category. The actual categories and shortcuts that appear depend on the logged-in user's privileges.

The Shortcut bar can be collapsed entirely to provide a larger space for the Browse/Edit area by clicking the << button at the top left of the screen. To expand the Shortcut bar again, click the >> button.

Browse/Edit Area – The widest portion of the application window, the Browse/Edit area is where data is displayed for viewing or editing. The actual data displayed here depends upon the shortcut icon that is selected from the Shortcut bar.

Quick Search Bar – Directly above the Browse/Edit Area, the Quick Search bar allows for simple, immediate queries of BOSS data. Using the

Quick Search bar simply involves typing the text to query in the **Look For** field and selecting the type of data (reads, hits, etc.) to search in the drop-down box.

Action Buttons – These are the buttons directly below the Browse/Edit area. These buttons will differ depending on the shortcut icon selected. The actual buttons that appear will also vary depending upon the user's privileges.

Status Bar – This is the area along the very bottom of the application window that displays the following system information:

- **BOSS System State** (Available or Offline): "Available" status indicates that the client is currently communicating with the BOSS server application and the server is running. This status is highlighted with a green background. "Offline" status indicates that the client is currently not able to communicate with the BOSS server and is highlighted with a red background. In this event, the BOSS UI will continue to check for the BOSS server to become available again. After three attempts to reconnect, the user will be notified that the connection could not be re-established and will be provided further instructions on how to proceed.
- **Reads:** The total number of reads currently contained in the BOSS system.
- **Hits:** The total number of hits currently contained in the BOSS system.
- **Misreads:** The total number of misreads currently contained in the BOSS system.
- **Devices Offline:** The number of fixed camera devices that are currently identified as offline.

3.2 The BOSS Home Screen

The BOSS Home screen is displayed within the Browse/Edit area upon login. The top banner displays the username of the current BOSS user, the BOSS server address, and current system statistics. Statistics may take a few moments to update after login. The action buttons, described below, are displayed along the bottom of the screen. The actual buttons that display will vary depending upon the user's privileges.

Exit – Exit the BOSS application.

Logout – Log out from the current session to the Login screen.

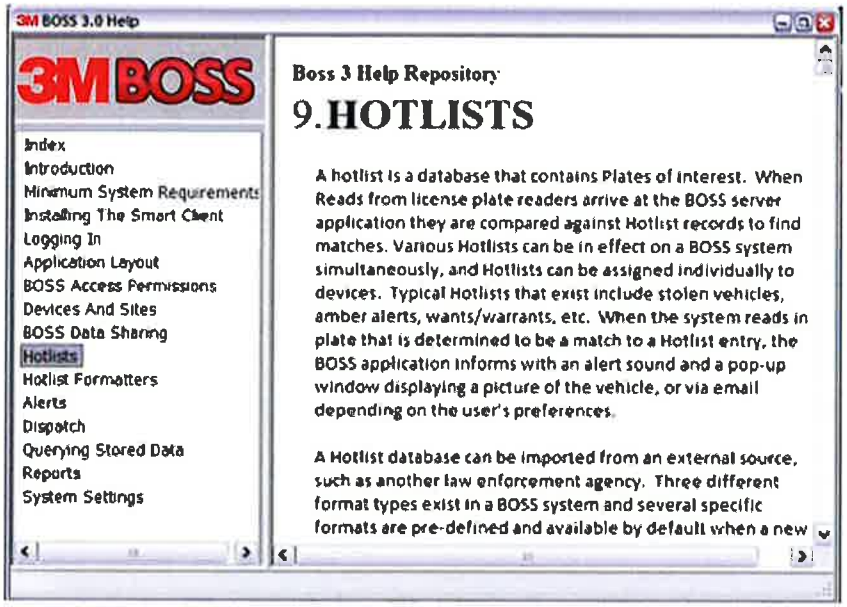
Alerts – Toggle dispatch alerts on (orange highlight) and off. This button will not be displayed if the user is not authorized to access the dispatch screen, or if the user has not chosen to receive dispatch alerts in Preferences *(Section 5.3)*.

Help – Activate the help system.

About – Display application information.

3.3 Help Documentation

BOSS provides a help document accessible in the client application. To access help, select **Help** in the File menu area or press the **F1** button. A help document will be displayed in a browser window and is indexed and searchable for ease of use.

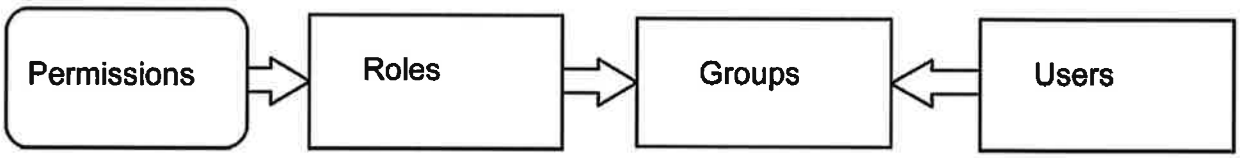


3.4 Minimizing the BOSS Application

The BOSS application can be minimized to the Windows System Tray using the Windows minimize button on the right upper corner of the BOSS application window. To restore the BOSS application, click on the **BOSS 3M** icon. When the application is minimized, real-time alerts will still be displayed.

4 BOSS Access Permissions: Users/Groups/Roles

Access permissions to various functions (such as reports or dispatches) in BOSS are administered through users, groups, and roles. Each individual who will use the BOSS software must log in via a user account. Each user account is assigned to a group. Every group is assigned a role (such as Administrator or Dispatcher), which determines the set of functionality to which the group's members will have access:



The security parameters defined in a role apply to a user via the group to which the user belongs.

4.1 Permission Levels

The following table lists the levels that apply to permissions:

LEVEL	EXPLANATION
No Access*	No permissions to the function
Read Only	View-only permissions to the function. Add/Change/Delete are not permitted.
Full Access	Complete permissions to the function. View/Add/Change/Delete are permitted.

**When a user's effective permissions to a function are No Access, the function is not visible to the user. For example, if a user has No Access privileges to the System function, the System category is not displayed.*

4.2 Permissions

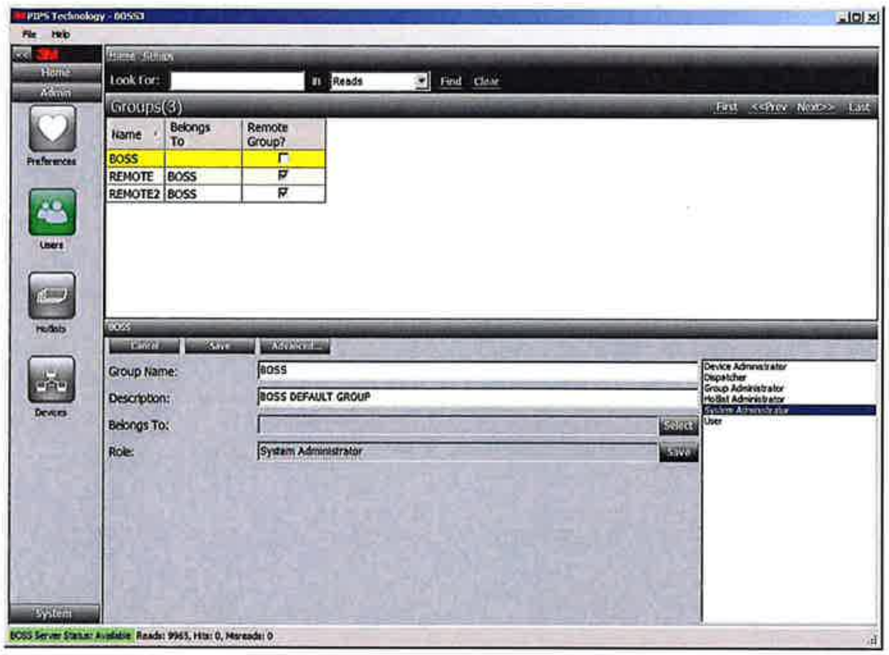
The following table lists the functions that are controlled by permissions levels:

PERMISSION	EXPLANATION
Reads	Plate read information
Dispatch	Real-time monitoring and hit alerts
Users	Groups and user accounts
Hotlists	Hotlists (plates of interest)
Devices	Sites and ALPR camera devices
System	System configuration options

See Section 15.4, Roles, for more information on setting permissions.

4.3 Roles

Roles are access permission profiles. BOSS comes with several predefined roles. A BOSS Administrator is able to add additional roles to the system. A BOSS Administrator is also able to alter and delete any roles. Roles define a **permission level for different functions** of the system. *See Section 15.4, Roles, for additional information.*

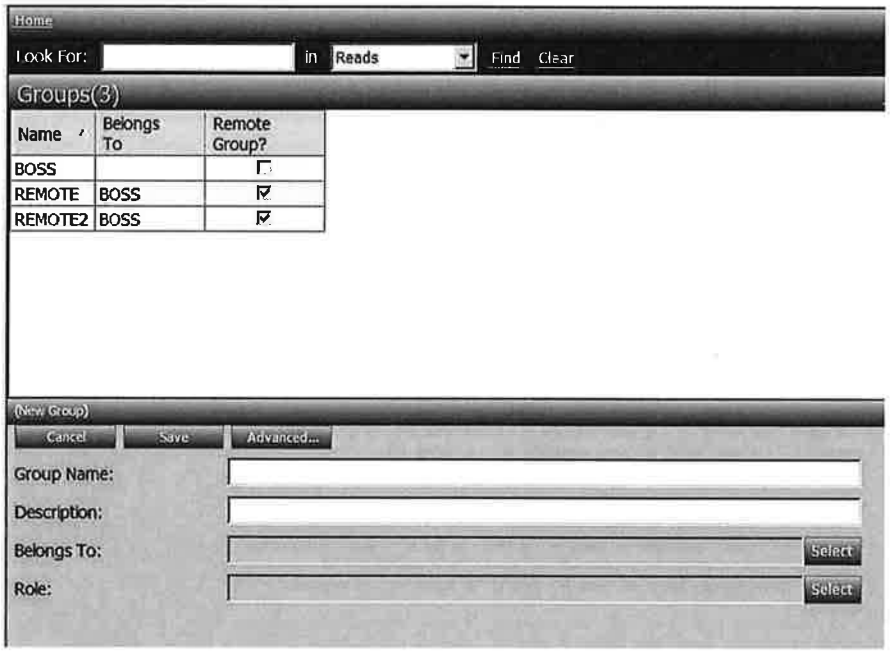


The following roles are installed by default in a BOSS system:

- System Administrator
- User
- Dispatcher
- Group Administrator
- Device Administrator
- Hotlist Administrator

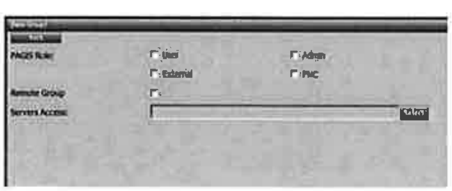
4.4 Groups

Groups are collections of users that have the same permissions. Groups provide an efficient way to organize users, for example by organizational units, and easily assign permissions to those users. Using groups is optional. A default group named "BOSS" automatically exists within a BOSS system, and user accounts will belong to the "BOSS" group by default. The BOSS group cannot be deleted.



4.4.1 Creating a New Group

1. Select the **Admin** category on the Shortcut bar.
2. Click the **Users** shortcut. A list of all current users will display in the Browse/Edit area.
3. Click the **Groups** button at the bottom of the Browse/Edit area. A list of all current groups will display in the Browse/Edit area.
4. Click the **New** button. The New Group Entry screen will display.
5. In the Group Name text box enter a name for the group. (**Note:** The group name must have a minimum of three characters.)
6. In the Group **Description** text box enter a description of the group (optional).
7. Each group, except for the default BOSS group, is required to have a parent group. In the Belongs To field, click the **Select** button to view a list of all existing groups. Click on the desired group and click the **Save** button to select. The name of the selected group will display in the Belongs To field as the parent group.
8. Assign a role to the group. In the Role field, click the **Select** button to select from the existing roles. Click the desired role from the list and click the **Save** button to make the selection. The name of the selected role will appear in the field.
9. Click the **Advanced...** button to access additional, optional settings for the new group.



4.4.1 Creating a New Group *(continued)*

PAGIS Role (User/Admin/External/PNC) – Check desired PAGIS (now LPCS) roles to grant the new group for the associated permissions in LPCS. *Please refer to the 3M License Plate Capture Software User's Manual for more information.*

Remote Group – Select this option to designate the group as remote. When a BOSS Administrator wants to give access to another BOSS system for remote queries ("data sharing," *see Section 6*), a login must be created and assigned to a group that is flagged as a remote group. The remote BOSS Administrator will then create a remote site with credentials for that login.

Servers Access – This option allows for defining which, if any, sites will be accessible by this group. Click the **Select** button to access a list of sites.

Note: There are two sites defined by default: Manual Entries and Unassigned. If no additional sites have been defined, only the default values are available in this field. Click each desired site and click the **Save** button to complete the selection process. If one site is selected the name of that system will appear in the Server Access field. More than one site can be selected.

Log Queries – This option, when selected, will result in the logging of all queries made by all users of the group. This information is then available via the audits report. **WARNING:** ***This can potentially be a very large amount of data. Select this option with care.***

a. Configure these Advanced User settings as desired.

b. Click the **Back** button to return to the main New Group Entry screen

10. Click **Save** to complete creating the new group, or click **Cancel** to clear the new group.

4.4.2 Parent Groups

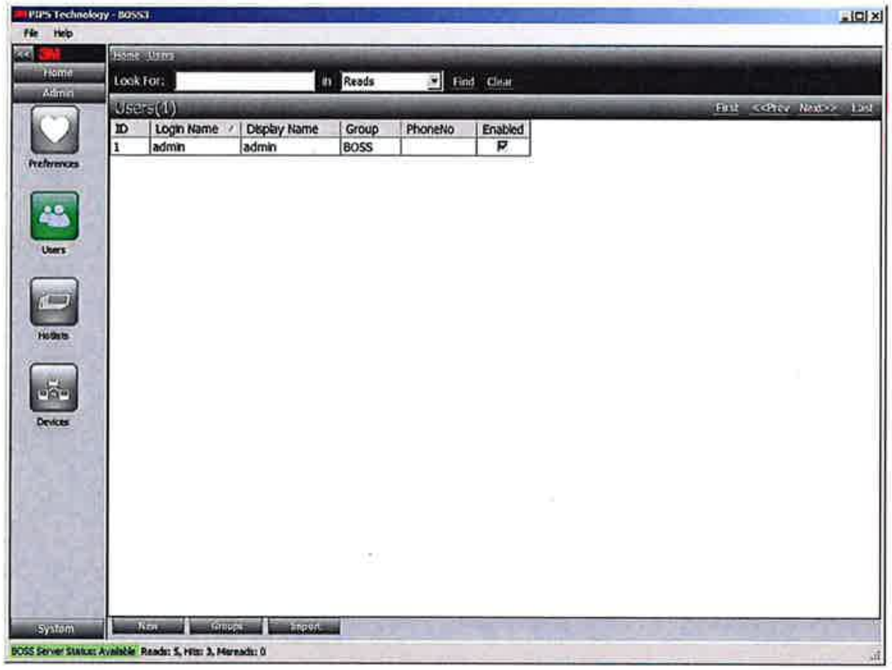
When creating a new group, you must select a parent group (the Belongs To field). BOSS uses a parent-child group structure as an organizational mechanism. This allows the BOSS Administrator to arrange groups into collections based on location, job role, or any other applicable criteria. In BOSS, the parent group can be selected in order to easily reach the entire collection of groups under that parent. This can be especially helpful in large installations with a large number of groups.

4.4.3 Deleting a Group

1. Select the **Admin** category on the Shortcut bar.
2. Click the **Users** shortcut.
3. Click the **Groups** button at the bottom of the Browse/Edit area. A list of all existing groups will display in the Browse/Edit area.
4. Click to select the desired group from the list.
5. Click the **Delete** button.
6. Click **OK** in the confirmation dialog to complete the operation.

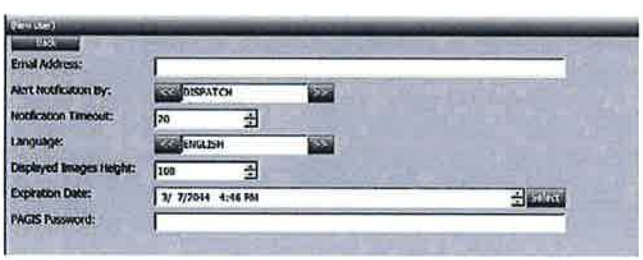
WARNING: Any users currently assigned to the deleted group will be assigned to the default "BOSS" group. You should empty the group by assigning all of its users to different groups prior to deleting it.

4.5 Users



4.5.1 Creating a New User

1. Select the **Admin** category on the Shortcut bar.
2. Click the **Users** shortcut. A list of all existing users will display in the Browse/Edit area.
3. Click the **New** button at the bottom of the Browse/Edit area. The New User Entry screen appears.
4. Enter a **Login Name** for the new user. This is the name the user will enter when logging into the BOSS application. (The login name must be at least three characters.)
5. Enter a **Display Name** for the new user (optional).
6. Enter a **Password** for the new user. (The password must be at least three characters.)
7. Select a **Group** for the user. Click the **Select** button to access a list of all groups. Click on the desired group and click the **Save** button to complete the selection.
8. Enter a contact **Phone Number** for the user (optional). This field is for informational purposes only; in case the BOSS Administrator needs to contact the user.
9. Click the **Advanced…** button to access additional, optional settings for the new user. Configure these advanced user settings as desired.



4.5.1 Creating a New User *(continued)*

Email Address – Email address or addresses associated with the user. BOSS alerts for the user are sent to the email addresses specified here. Multiple addresses should be separated with a comma.

Alert Notification By – A user can be configured to receive BOSS alerts through the Dispatch application, email, or both. Click the << or >> buttons to cycle through the options, stopping at the desired selection.

Notification Timeout – The cutoff time from the time when a hit occurred after which an alert will no longer be sent to the user. For example, if the notification timeout is 20 minutes and a plate of interest is detected at 12:00 pm, notification is not sent to the user after 12:20 pm. This timeout prevents alerts being sent for events that are delayed in arrival to BOSS.

Language – The language preference for the user. The default value is English.

Displayed Images Height – This setting defines the vertical size in pixels of the images (reads and hits) that will display for the user on the Dispatch and Reads screens.

Expiration Date – Date for the user account to automatically be disabled. If no expiration is desired, simply leave this field at its default value (30 years from current date).

PAGIS Password – The user's LPCS password.

Note: The user must be in a group that has been granted LPCS permissions in order for the user to log in to 3M License Plate Capture Software.

---

10. Click the **Back** button to return to the main New User Entry screen.
11. Click the **Save** button to complete creating the new user.

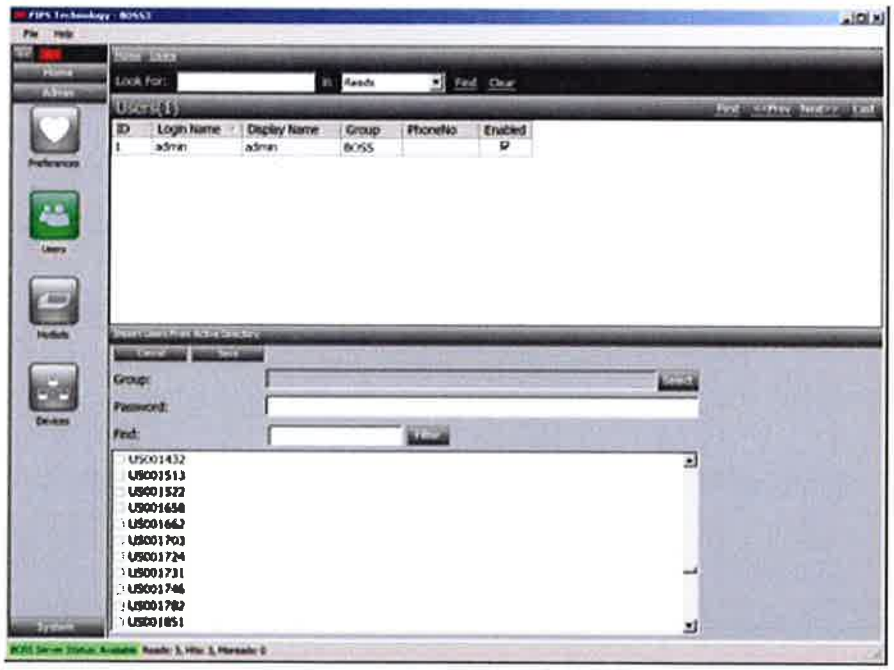
4.5.2 Deleting a User

1. Select the **Admin** category on the Shortcut bar.
2. Click the **Users** shortcut. A list of all existing Users will display in the Browse/Edit area.
3. Click the desired user in the list.
4. Click the **Delete** button at the bottom of the Browse/Edit area.
5. Click **Yes** to confirm the operation.

4.5.3 Importing Users from Active Directory

BOSS allows user logins to be imported from Microsoft Active Directory (AD) service.

1. Select the **Admin** category on the Shortcut bar.
2. Click the **Users** shortcut.
3. Click on the **Import** button.



4. Select the BOSS group that will receive the imported logins. Click the **Select** button to display available groups and **Save** to commit the selection.
5. Enter the default password for the imported logins in the Password field.
6. Browse for the desired users, ***or*** type in the desired login name (full or partial) in the Find field and press the **Filter** button.
7. Click on the checkbox in front of the desired usernames to select users to be imported to BOSS.
8. Click on **Save** to import the users from Active Directory.

Note: A Windows login cannot have any punctuation included or problems will occur with reads queries being performed.

4.6 Access Permissions Example

The previous sections have described how BOSS user security is designed, using roles, groups, and user accounts. This section presents a working example that integrates the information in this chapter.

A BOSS Administrator creates a role, names the role "Temporary Workers," and defines the new role to have very limited permissions, as follows:

Reads	Read Only
Dispatch	Read Only
Users	No Access
Hotlists	No Access
Devices	No Access
System	No Access

Then the Administrator creates a group called "Temps." When creating the group, a role is required. The Administrator selects the new role just created "Temporary Workers," which assigns the permissions, defined above, to the new group.

Next, the Administrator creates a user account, "Jsmith," for a temporary worker. While creating the new user, the Administrator is required to select a group for the user, and assigns the user to the "Temps" group just created.

The user "Jsmith" has now been created with the permissions shown above because he belongs to the group called "Temps" and that group was assigned the "Temporary Workers" role.

As this example shows, this security design allows reusability of security roles because a BOSS Administrator can define a set of permissions in a role, and that role can be assigned to multiple groups.

5 Devices and Sites

5.1 Devices

A BOSS device is any source that can input reads into the system. Typically, a device is a camera—either fixed or mobile (mounted on a vehicle). Another source for reads is manual entry, in which a BOSS user types the information for a read into the BOSS application.

5.1.1 Default Devices

A new BOSS site automatically contains two default devices, Manual Entries and Unassigned. A BOSS Administrator creates additional devices applicable to his/her organization.

To see the current devices in your system with information about their status:

1. Select the **Admin** category on the Shortcut bar.
2. Click the **Devices** shortcut.

The devices will be listed in rows with the following column headings:

Device Name – The name assigned to the device, used in the device selections and is the description of the device. The list will always include Manual Entries and Unassigned.

Name – The name that is given to the device.

Site – The group of devices to which this device belongs. Sites can be grouped by geographical location or other criteria. *See Section 5.2, Sites.*

Fixed – This box will be checked if the device is fixed camera, rather than a mobile camera.

Enabled – This box will be checked if the device is currently enabled (*see Section 5.1.4*).

Status – The Status field can display the following messages:

Device Added – If the device is newly added to the list, this message will display.

5.1.1 Default Devices *(continued)*

Offline – This device is a previously connected fixed camera that is not currently connected to BOSS.

Online Heartbeat – BOSS has detected a ping from a fixed camera.

Online Synced – The device's connection with BOSS has been established. This is shown for LPCS mobile devices only and may not change when the device is offline.

Updated – Information has been sent from BOSS to the device, and the device is up to date.

Received Logins – Updates to the device included logins that were successfully sent to the device.

Received Source – BOSS has found the hotlist source file that it needs in order to send the updated hotlist to the device. **Received Source** may not be displayed due to timing or events.

Received Hotlist – The hotlist scheduled to be successfully sent has been sent to the device.

Received Hotplates – BOSS is sending "pages" of hotplates for a large hotlist, and the last page was successfully received.

Received Targets – The update to the device included targets that were successfully sent.

5.1.2 Defining a Device

Note: Devices will be defined automatically when a 3M device, such as an ALPR camera, connects to BOSS the first time. Normally, there is no need to define devices in advance.

---

1. Select the **Admin** category on the Shortcut bar.
2. Click the **Devices** shortcut. A list of existing devices will appear in the Browse/Edit area.
3. Click the **New** button.
4. Enter a name for the new device. (The name must be at least three characters long.) Note that the name **CANNOT BE CHANGED** once the device has been created.
5. Enter a **Description** for the new device. (The description must be at least three characters long.)
6. Select **Mobile** or **Fixed** in the Type field. By default, **Fixed** is selected. To change the current selection, click the **left** or **right** arrow.
7. Select a **Site**. Click the **Select** button next to the Site field to display a list of all available sites. Click on the desired site in the list and click the **Save** button.

Note: In addition to the two default sites, Manual Entries and Unassigned, which are created automatically when a new BOSS system is installed, other sites can be created by an authorized BOSS user. *See Section 5.2, Sites, for more information.*

---

8. Select **Owners**. Owners are groups that can access this device. For LPCS units, user logins are sent only to devices where the group is an owner of the device. Click the **Select** button next to the Owners field to display a list of all BOSS groups. Select each desired group by clicking the checkbox. When the desired groups are selected, click the **Save** button. The group name(s) selected will be displayed in the Owners field.

9. Select **Latitude** and **Longitude** values for the geographical location of a device by typing in a value or using the up and down controls on each field to increase or decrease the value. Note that some devices, such as LPCS units with a GPS attached, will automatically send the latitude and longitude of the device to BOSS.
10. Click the **Advanced** button to display additional options for the device.

    No Reads Alert – Defines how long the device must remain with no reads coming in before the system shows the device as offline.

    Alert Email – The email address or addresses to which alerts associated with this device should be sent.

    Retain Reads – The length of time that reads from this device should be saved in the BOSS database. The **Retain Reads** setting must be longer or equal to the **Retain Images** setting.

    Retain Images – The length of time that pictures captured by this device should be saved in the BOSS database.

    Retain Hits – The length of time that hits captured by this device should be saved in the BOSS database.

    SpikeStore – The 3M High Resolution ANPR/ALPR Camera P382 and the 3M Compact ANPR/ALPR Camera P372 (formerly the Spike P382 and P372 cameras) allow captured images to be stored in an on-board USB flash drive to be retrieved on demand. Setting a device as a **SpikeStore** device causes BOSS to attempt to retrieve images from the storage device when the read is requested for viewing.
11. When Advanced Options have been set as desired, click **Back** to return to the New Device screen.
12. Click the **Save** button to complete creation of the new device. The new device will now appear in the devices list above.

5.1.3 Editing a Device

1. Select the **Admin** category on the Shortcut bar.
2. Click the **Devices** shortcut. A listing of all devices appears in the Browse/Edit area.
3. Click the desired device to select it. Details for the selected device appear in the Browse/Edit area.
4. Click the **Edit** button.
5. The Device Edit screen appears in the lower portion of the screen.
6. Modify fields as desired and click the **Save** button.

5.1.4 Enabling and Disabling a Device

1. Select the **Admin** category on the Shortcut bar.
2. Click the **Devices** shortcut. A listing of all devices appears in the Browse/Edit area.
3. Click the desired device to select it. Details for the selected device appear in the Browse/Edit area.
4. Click the **Edit** button.
5. The Device Edit screen appears in the lower half of the screen.
6. Click the **Disable/Enable** button. The change will immediately close the edit window and return to the Devices screen. It will also take effect immediately.

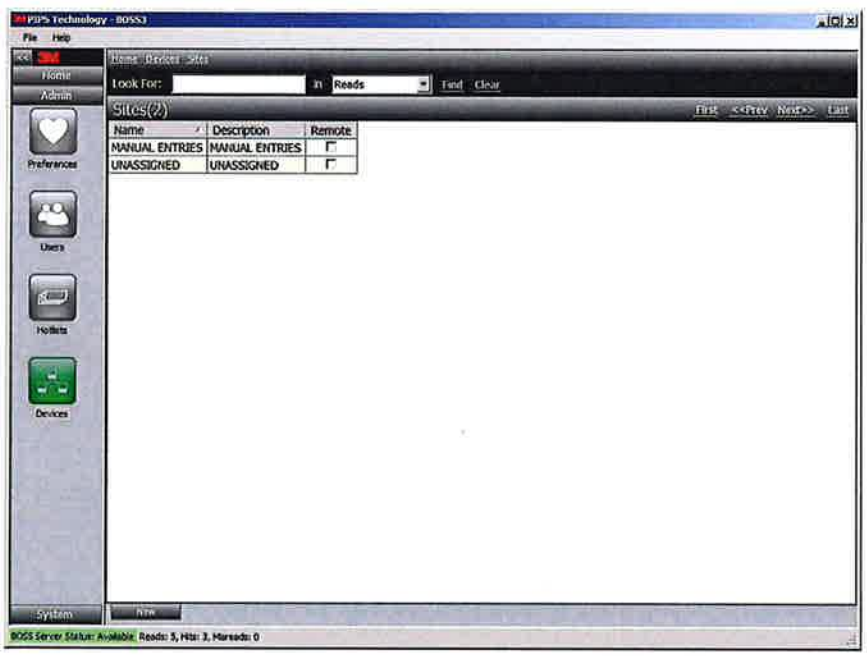
5.1.5 Deleting a Device

Note: It is strongly recommended that **devices are never deleted.** If a device is deleted, queries can no longer be performed using the device as a criterion. Instead of deleting a device, it should be disabled or given a new description.

1. Select the **Admin** category on the Shortcut bar.
2. Click the **Devices** shortcut. (A listing of all existing devices will display in the Browse/Edit area).
3. Click the desired device in the listing.
4. Click the **Edit** button.
5. Click the **Delete** button at the bottom of the Browse/Edit area.
6. Click **Yes** to confirm the operation.

5.2 Sites

A site is a mechanism for organizing devices. This allows a BOSS Administrator to arrange devices into groups according to convenience, such as geographical area or a facility. The ability to group or arrange devices can be quite useful in large installations where there are many devices. Each device created must be assigned to a site.



5.2.1 Default Sites

A new BOSS site automatically contains two default sites, Manual Entries and Unassigned. Normally, a BOSS Administrator will want to create additional sites applicable to an organization.

5.2.2 Creating a Site

1. Select the **Admin** category on the Shortcut bar.
2. Click the **Devices** shortcut.
3. Click the **Sites** button at the bottom of the screen. A list of existing sites will appear in the Browse/Edit area.
4. Click the **New** button at the bottom of the screen.
5. Enter a name for the new site. (The name must be at least three characters long.) Note that the name cannot be changed once the site is created.
6. Enter a description for the site. (The description must be at least three characters long.)
7. Select the parent site for the site. BOSS allows organizing sites into tree-like hierarchies. Click the **Select** button next to the Belongs To field, and select one site from the list. Click the **Save** button to complete the selection. The site name will appear in the Belongs to field.
8. Check the **Remote** option to designate the site as a remote site. (*Remote sites are explained in Section 6, BOSS Data Sharing.*)

5.2.3 Deleting a Site

Note: It is strongly recommended that sites **are never deleted**. If a site is deleted, queries can no longer be performed using the site as a criterion. Instead of deleting a site, it is recommended that devices assigned to it should be moved to another site.

---

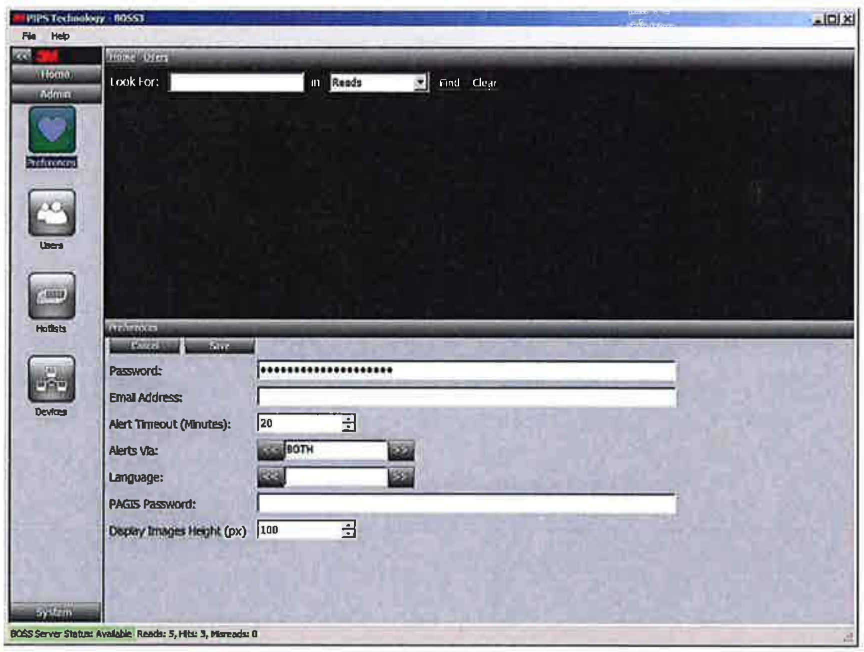
1. Select the **Admin** category on the Shortcut bar.
2. Click the **Devices** shortcut. A listing of all existing devices will display in the Browse/Edit area.
3. Click the **Sites** button at the bottom of the screen. A listing of existing sites will appear in the Browse/Edit area.
4. Click the desired site in the listing and click the **Edit** button.
5. Click the **Delete** button at the bottom of the Browse/Edit area. Click **Yes** to confirm the operation.

5.3 Preferences

The Preferences section allows for changing settings for the currently logged-on BOSS user, such as the password and email addresses.

5.3.1 Changing User Preferences

1. Select the **Admin** category on the Shortcut bar.
2. Click the **Preferences** shortcut. The Preferences Entry screen appears at the bottom of the Browse/Edit area.
3. Modify the preferences settings as desired and click the **Save** button.



Password – Login password for the BOSS user. For security purposes, the existing password does not display on screen.

Email Address – Email address or addresses associated with the user. BOSS alerts for the user are sent to the email addresses specified here. Multiple addresses should be separated with a comma.

Alert Timeout (Minutes) –The cutoff time for older hits to alert the user.

Alerts Via – A user can elect to receive BOSS alerts through the Dispatch screen, emails, or both.

Language – Language preference for the user. The default value is English.

PAGIS Password (LPCS Password) – The 3M License Plate Capture Software password for the user.

Note: The user must be in a group that has been granted LPCS permissions in order for the user to log in to LPCS.

Display Images Height (px) – This setting defines the size in vertical pixels of the images (reads and hits) that will display for the user in the Dispatch and Reads Query sections.

6 BOSS Data Sharing

BOSS allows "linking" of multiple BOSS systems for data-sharing purposes. When a user issues a query from the Smart Client application that includes a remote site, the query is submitted to the local BOSS server, which in turn makes a query to the remote BOSS server(s). The combined results from all the sites are then returned to the Smart Client. ***Data from remote sites is not stored in the local BOSS server.***

The following configuration steps need to be taken to permit BOSS data sharing:

6.1 Configuring BOSS to Allow Remote BOSS Queries

1. Create a BOSS user for remote access. This user account is a "proxy" the local BOSS server will use for all requests from a remote site. This user account will have "Reads" privileges by default; no other privileges need to be given. The user must be assigned to a remote group. *(See Section 4.4, Groups, for information about flagging a group as remote.)*
2. Give the username and password for this "proxy" user to the BOSS Administrator at the remote BOSS system. The remote BOSS will need to be configured to access this BOSS system, described in the next section.

Tip: It is best to create a dedicated user account for remote sites—one that will not be used by an actual user to log in and access the application.

6.2 Configuring BOSS to Access a Remote BOSS Server

1. Obtain username and password from BOSS Administrator at the remote site.
2. Create a site for the remote BOSS server and select the **Remote** option.
3. Enter the remote site IP address and BOSS service port (23032 by default).
4. Add the username and password provided.
5. For each group that is allowed to query the remote BOSS server, assign the remote server to the user via the **Servers Access** option. *(See Section 4.4, Groups, for information on selecting Servers Access.)*
6. Log out of the application.
7. Log back on using the provided username and password. The Remote BOSS server can then be queried by selecting the desired servers in the Reads Query screen.

Note: BOSS version 3.2 and above only supports data sharing with servers running BOSS 3.0 and above.

---

7 Hotlists

A hotlist is a database that contains license plates of interest. When reads from license plate readers arrive at the BOSS server application, they are compared against hotlist records to find matches. Various hotlists can be enabled on a BOSS system and used in this comparison. In addition, hotlists can be assigned individually to specific devices. Only reads from those devices will be compared against these hotlist records. Typical hotlists include stolen vehicles, amber alerts, wants and warrants, etc. When the system reads in a plate that is determined to be a match to a hotlist entry in a hotlist, the BOSS application informs the user either with an alert sound and a pop-up window displaying a picture of the vehicle, or via email, depending on the user's preferences *(see "Alerts via" in Section 5.3, Preferences)*.

A hotlist can be a database imported from an external source, such as another law enforcement agency. It can also be a list created by the local BOSS Administrator. For the BOSS server application to be able to understand how to import the hotlist records into the database, there are three different format types that exist in a BOSS system. In addition there are several specific formats that are pre-defined and available by default when a new BOSS system is installed *(see Section 8, Hotlist Formatters)*.

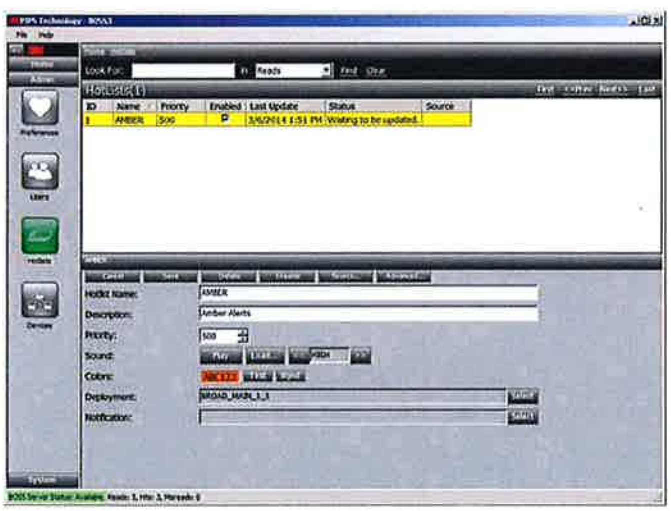
7.1 Creating a New Hotlist

There are three general areas to complete when creating a new hotlist:

- **Configure basic settings.**
- **Define a source and provide credentials for the source (when necessary).**
- **Define advanced settings (optional).**

7.1.1 Configuring Basic Hotlist Settings

1. Select the **Admin** category on the Shortcut bar.
2. Click the **Hotlists** button. Currently existing Hotlists appear in the Browse/Edit area.
3. Click the **New** button at the bottom of the Browse/Edit area. The New Hotlist Entry form appears.



4. Enter a **Hotlist Name** for the hotlist. It must be at least three alphanumeric characters, and it cannot be an existing hotlist name.
5. Enter a **Description** for the hotlist (optional).

6. Select a **Priority** for the hotlist. When there are multiple hits/alerts, the priority determines which alert will occur first. (The lower the number, the higher the priority.)

7. Select a **Sound** for alerts resulting from this hotlist (optional). Click the **Load** button to select a wave sound file (*.wav). To test the selected sound, click the **Play** button. Optionally, one of the three default sounds may be selected, **Low**, **Medium**, or **High** alert.

8. Select **Colors** for the alert if desired (optional). The default is white text on a royal blue background. Custom color settings affect the entries in dispatch. The background color also applies to alerts given in LPCS.

9. Click the **Text** button to select a color for the text.

10. Click the **Bgnd** (Background) button to select a color for the background.

Note: Currently selected text and background colors are displayed in the sample box (showing "ABC123").

---

11. Select devices for **Deployment.** Click the **Select** button to select devices from the list of those currently available. Click the checkbox next to a device in order to select it. When desired devices are checked, click the **Save** button to make the selection. One or more devices can be selected, and they will be displayed in the Deployment field.

Note: Deployment means distributing the hotlist to a device or devices. Only the devices where a hotlist is deployed will produce hits from the hotlist.

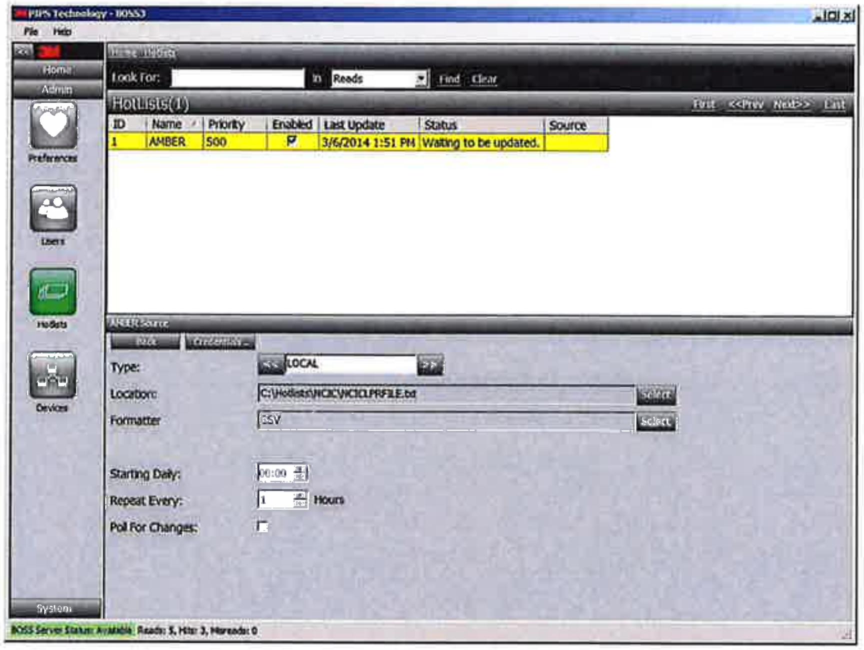
---

12. Select groups for Notification. Click the **Select** button to see a list of all BOSS groups. Click the checkbox next to a group to select the group. When you select a parent group, child groups are automatically selected. When desired groups are checked, click the **Save** button to make the selection.

Note: In order to receive alerts for hits on the hotlist, the user must be in the notification list of the hotlist. *For more information see Section 7.1.5, Defining Hotlist Advanced Options.*

7.1.2 Defining the Hotlist Data Source

1. On the New Hotlist Entry screen, click the **Source…** button to open the screen shown in the lower half of the following image:



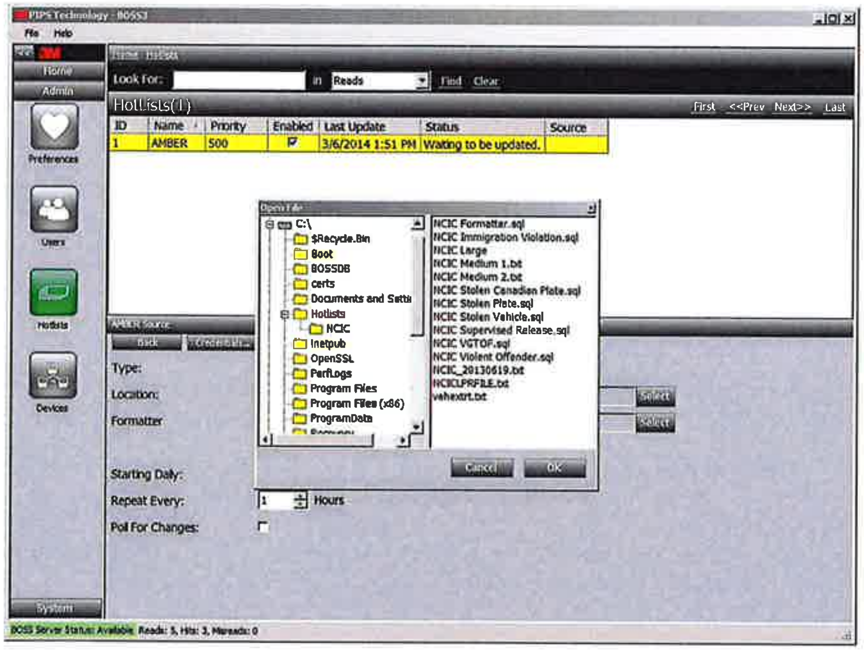
2. Choose the appropriate entries for each of the fields that describe the new hotlist:

   Type (**Network** or **Local**) – A local source means that the file is stored on the BOSS server's Windows file system. A network source means that the hotlist source resides outside the BOSS server.

Note: If a Local source is selected, the source file location (folder) must be accessible to the Windows process running the BOSS server application ("PIPS BOSS3" Windows service).

Location – Enter the location of the hotlist file. Click the **Select** button to the right of the location field.

For a local source, a file dialog will display, allowing you to navigate to a path and select a file.



For a network source, select one of the default locations displayed (if applicable), **or** type in the location of the source:

HTTP – The location format must be in Hypertext Transfer Protocol (HTTP) format: "http://server:port/path." There are a few predefined HTTP locations (such as CA DOJ) included in BOSS. These locations can be accessed with the **Select** button.

Remote BOSS System – The location format must be "boss://server:port/hotlist," where "hotlist" is the hotlist name on the remote system.

Note: The remote system hotlist name **MUST** be alphanumeric and **CANNOT** contain any spaces.

Formatter – Formatter defines the way a hotlist database file is parsed into discrete fields. Click the **Select** button next to the Formatter field. A list of available formatters appears. Click on the desired formatter and click the **Save** button to make the selection. The name of the selected formatter will appear in the field.

Note: Normally one of the several default formatters included with BOSS is sufficient. A new custom formatter can be created if necessary. *See Section 8.1, Creating a New Formatter for Hotlists, for more information.*

7.1.2 Defining the Hotlist Data Source *(continued)*

Starting Daily – Specify the time of day the hotlist should begin updating each day. The time is formatted as hours:minutes in the 24-hour clock, i.e., between 00:00 and 24:00 can be selected.

Repeat Every – Specify the time interval, in hours (1 – 24), between updates.

OR

Poll for Changes – If you choose this setting, BOSS will check for updates to the hotlist approximately every 30 seconds. When this option is selected, the **Starting Daily** and **Repeat Every** options are disabled.

Note: If **Poll for Changes** is selected, and the hotlist source resides on the network, BOSS will attempt to make a network connection every 30 seconds. This frequency may add significantly to network traffic. Use with caution.

7.1.3 ZIP Compressed Hotlist Files

BOSS will automatically recognize and extract a hotlist data file contained in a ZIP archive file, such as Windows Explorer compressed (zipped) folder.

Note: There can be only one file in the ZIP archive.

7.1.4 Defining Hotlist Source Credentials

Some sources will require credential settings (e.g., login information) in order to allow BOSS to access that data. To enter the Credentials Settings screen from the Hotlist Source screen, click the **Credentials** button.

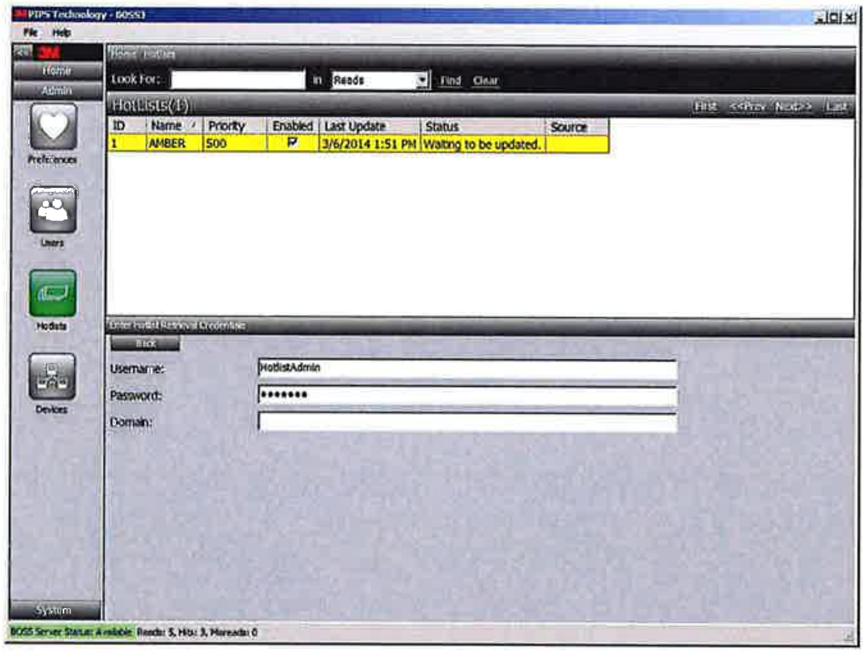
The credentials depend on the source type as follows:

Network-HTTP – If the HTTP (website) source defined requires login information, it should be entered in the Credentials Setting screen. This information will include username and password. The domain field may be necessary as well. Consult the Administrator of the HTTP source for required login information.

Network-Remote BOSS system – A username and password valid on the remote BOSS system must be entered (as in remote sites configuration, described in Section 6.0, BOSS Data Sharing). Consult the Administrator of the remote BOSS system for a username and password.

To set credentials for a source:

1. Click the **Credentials** button. The Credential Input screen appears.
2. Enter the username, password, and domain information applicable to the source you are specifying.
3. Click the **Back** button to return to the Source Entry form.
4. Click the **Back** button again to return to the New Hotlist Entry screen.



7.1.5 Defining Hotlist Advanced Options

Advanced Options are values that allow you to further define details of the new Hotlist. To access the Advanced Options, click the **Advanced...** button.

Covert – A covert hotlist is one that contains sensitive information that should only be available to certain user groups.

The effects of defining a hotlist as covert are as follows:

- A hit on the covert hotlist will not be alerted to users in mobile LPCS vehicles, unless the logged-on user is a LPCS Administrator.
- A hit on the covert hotlist will not be alerted in the BOSS application, regardless of the user alert preferences. Hit alerts for covert hotlists will be sent only via email.
- When reads are queried, hit information on covert hotlists will be displayed only to users in the Notifications list for the hotlist. Other users will see that the read is a hit, but no information will be shown.
- Hit information for hits from covert hotlists will not be sent to remote BOSS servers.

Whitelist – This option, when selected, defines the hotlist to be a whitelist, which works in reverse to a normal hotlist. A whitelist defines a list of plates that are **authorized** and not of concern. When a whitelist is active, license plates read that do ***not*** match an entry on the list will trigger a hit/alert.

7.1.5 Defining Hotlist Advanced Options *(continued)*

An example of whitelist use might be a secure parking lot where fixed camera devices are monitoring vehicles entering. Authorized plates will match entries in a whitelist hotlist. If a plate is read that does not match an entry in the whitelist, an alert occurs.

Whitelists and hotlists can be active simultaneously for a device.

Note: Whitelist support in LPCS requires a separate license. If you do not have the license and wish to use whitelists, please contact your 3M sales representative for further information.

Ext Trigger – This option, when selected, sets the External Trigger flag on a hotlist when it is passed to LPCS. It is only supported in LPCS version 2.6.6 or above and will have no effect on earlier versions of the software.

One Time – This option, when selected, specifies that the hotlist data should only be accessed from its defined source one time; no subsequent updating will occur after the initial import.

Alert Timeout – This setting allows you to define how current a hit (from this hotlist) must be in order to cause an alert. This primarily pertains to information coming in from mobile units, where there may be a large delay. Alert Timeout can be specified in minutes, hours, days, or months.

Delete Inactive – BOSS updates hotlists in an incremental manner, and instead of deleting hotlist entries that no longer exist, non-existent entries are marked as "inactive." If the entry subsequently becomes valid, the entry is marked as active again. The Delete Inactive value determines how long inactive entries are kept in the BOSS hotlist database.

Note: If LPCS mobile units are used, this value should be set to the longest time between begin shift downloads to LPCS.

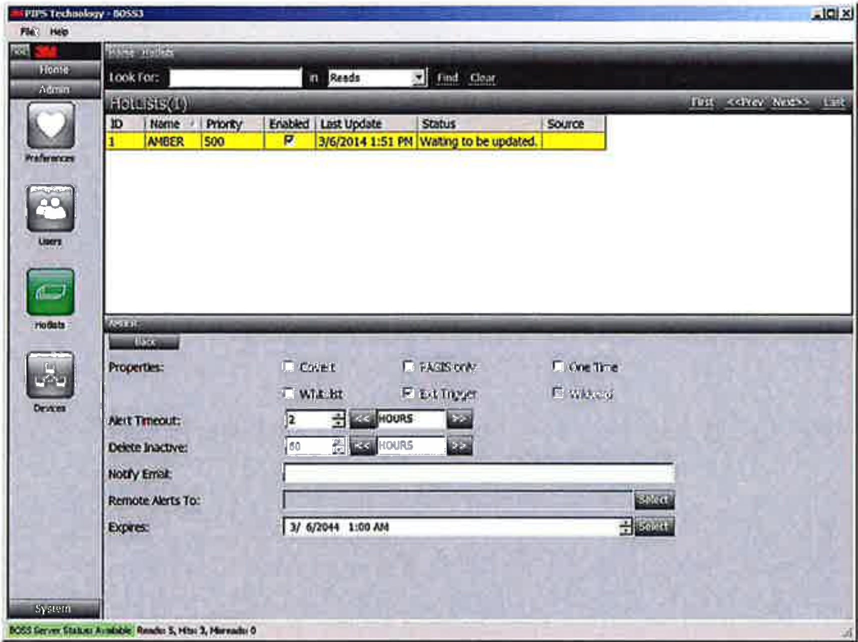
Notify Email – One or multiple email addresses may be defined to receive an alert when there is a hit. Multiple email addresses can be entered in the field, separated by a comma.

Remote Alerts To – Select the remote sites in which to send alerts. When a BOSS system sends an alert to a remote system, it is sent as a read; the remote BOSS system then determines whether to treat the read as a hit.

Note: This setting is only applicable if remote sites are defined.

Expires – Determines the date that the hotlist will stop importing data from its source. For a hotlist that is intended to be permanent, leave the expiration at the default value, 30 years from current date.

7.2 Enabling and Disabling a Hotlist



1. Select the **Admin** category on the Shortcut bar.
2. Click the **Hotlists** shortcut. A list of all hotlists appears in the Browse/Edit area.
3. Click the desired hotlist. Details for the selected hotlist appear in the Browse/Edit area.
4. Click the **Edit** button.
5. The Hotlist Edit screen appears in the lower half of the screen.
6. Click the **Disable** or **Enable** button.

7.3 Modifying Hotlist Entries

BOSS allows viewing, adding, editing, and deleting hotlist entries.

Note: If the hotlist is set to update automatically, any changes to that hotlist made from within the BOSS User Interface application will be lost at the next automatic update.

7.3.1 Querying Hotlist Entries

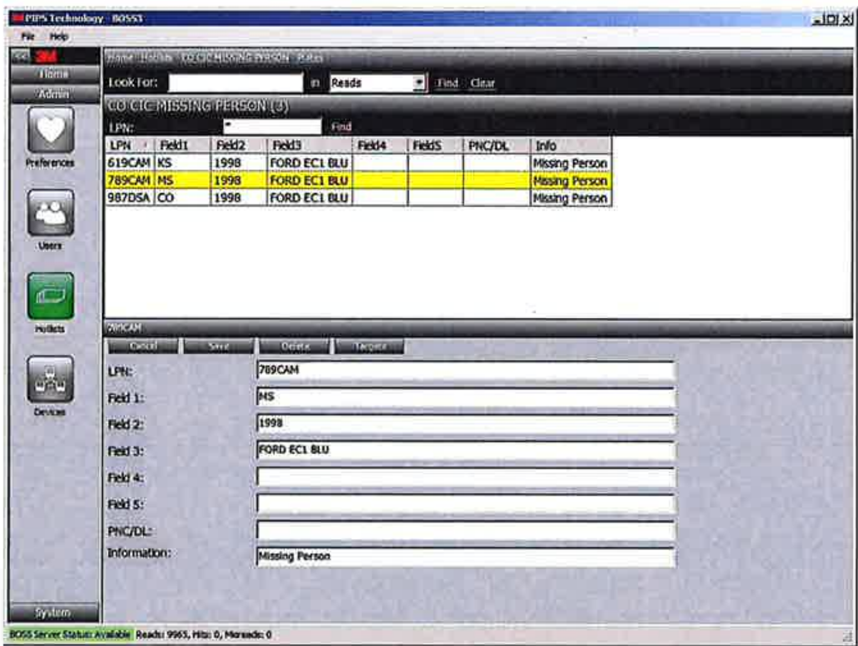
1. Select the **Admin** category on the Shortcut bar.
2. Click the **Hotlists** shortcut. A listing of all hotlists appears in the Browse/Edit area.
3. Click the desired hotlist. Details for the selected hotlist appear in the Browse/Edit area.
4. Click the **Plates** button.
5. The Hotlist Plates screen will be displayed.

6. Type in the full or partial plate text to search for in the LPN field. (Wildcard searches are supported. *See Section 11.1, Wildcards, for more information.)*
7. Click on **Find**. License plates that match the criteria will be displayed. Note that only the first 1,000 matching license plates will be shown.

7.3.2 Editing a Hotlist Entry

1. Retrieve hotlist plates as instructed in the previous section.
2. Click on the row showing the desired plate.
3. The Plate Edit form will be displayed at the bottom of the screen.
4. Edit the field values as desired.
5. Click **Save** to save changes.

Note: Manually edited hotlist entries will be lost the next time the hotlist is updated.



7.3.3 Adding a Hotlist Entry Manually

1. Select the **Admin** category on the Shortcut bar.
2. Click the **Hotlists** shortcut. A listing of all hotlists appears in the Browse/Edit area.
3. Click the desired hotlist to select. Details for the selected hotlist appear in the Browse/Edit area.
4. Click the **Plates** button.
5. Click the **New** button. The Plate Edit form will be displayed at the bottom of the screen.
6. Enter the **LPN** (mandatory) and other fields (optional).
7. Click **Save** to save changes.

Note: Manually added hotlist entries will be lost the next time the hotlist is updated.

7.3.4 Deleting a Hotlist Entry

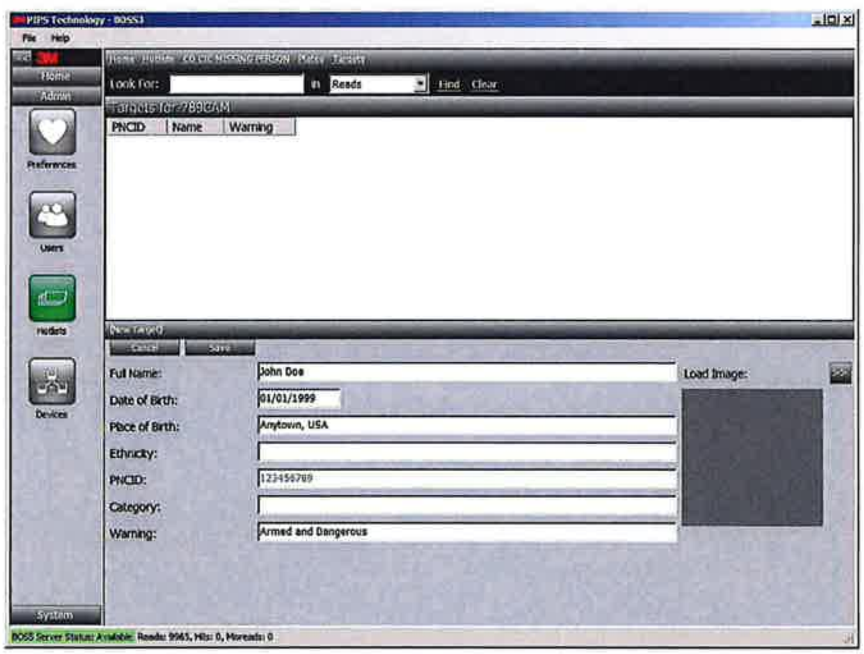
1. Retrieve hotlist plates as instructed in the Querying Hotlists Entries section.
2. Click on the row showing the desired plate. The Plate Edit form will be displayed at the bottom of the screen.
3. Click the **Delete** button.
4. Click **Yes** to confirm the deletion.

Note: Manually deleted hotlist entries may be re-added the next time the hotlist is updated.

7.4 Targets

Targets are individuals of interest associated with a license plate. Target information is downloaded to the LPCS mobile application from BOSS.

1. Retrieve hotlist plates as instructed in Section 7.3.1, Querying Hotlists Entries.
2. Click on the row showing the desired plate.
3. The Plate Edit form will be displayed at the bottom of the screen.
4. Click the **Targets** button. Information about the target will display.



7.4.1 Creating a New Target

1. Click the **New** button.
2. The Target Edit form will be displayed.
3. Fill in the fields, listed below, with appropriate values.

   Full Name – The first and last name of the target.

   Date of Birth – The date of birth of the target.

   Place of Birth – The location where the target was born.

   Ethnicity – The ethnicity (race or national origin) of the target.

   PNCID – This field can be used to enter any type of identification number that is available. In the UK this is the Police National Computer identification number of the target. This field is linked to the PNCID field in the hotlist information in the LPCS application. *See the sample INI configuration file in Section 5 of the 3M License Plate Capture Software User's Manual.*

   Category – The category of the target, such as Felon, Suspect, etc.

   Warning – The warning information to display to the officer.

   Load Image – An image of the target, such as a DMV photo or "mugshot," can also be associated with the Target record. Upload an image by clicking on the **Select** button and browsing to the image file. Supported formats include JPG, GIF, or BMP.
4. Click the **Save** button.

7.4.2 Deleting a Target

1. Access the Targets screen as described above.
2. Click the row containing the target to be deleted.
3. The Target Edit form will be displayed.
4. Click the **Delete** button.
5. Click **Yes** to confirm deletion.

8 Hotlist Formatters

Hotlist Formatters define the structure of source data that is imported into BOSS Hotlists. BOSS includes several default formatters when the software is installed. There are three types of formatters:

CSV (comma-separated values) – A flat text file containing one line for every record. Each field in the record is separated by a comma.

Fixed Length – A flat text file containing records that are all the same length. No separator characters are used to determine where each field ends and another begins, but rather, field and record lengths are known up front. In a fixed length file, padding spaces are used where necessary, to accomplish the correct field length.

NCIC (United States National Crime Information Center) – The NCIC database is a computerized index of criminal justice information (i.e., criminal record history information, fugitives, stolen properties, missing persons, etc.), that is available to law enforcement agencies 24 hours a day, 365 days a year. Several NCIC import sources/formats exist within BOSS.

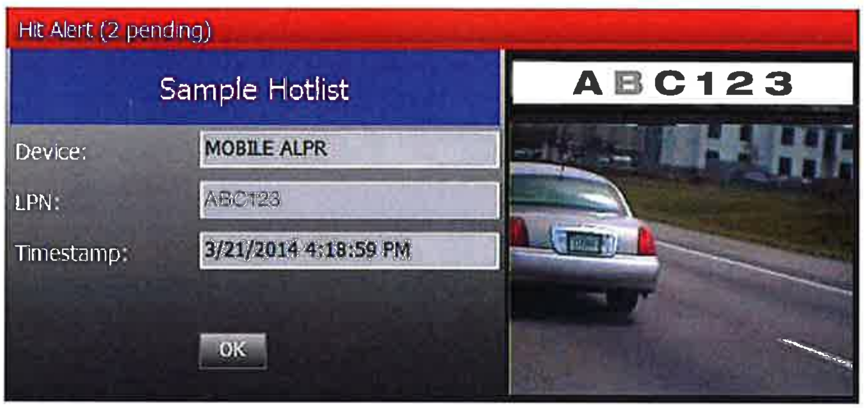
8.1 Creating a New Formatter for Hotlists

Normally, when creating a new hotlist, you will find that one of the default formatters can be used. However, BOSS does give you the flexibility to create new hotlist formatters. Creating a new formatter or modifying an existing formatter should be approached with caution and is beyond the scope of this manual. 3M provides BOSS training that details creating and modifying hotlist formatters in practice. *For more information, please contact 3M Technical Support.*

9 Alerts

BOSS can provide real-time alerts on-screen, via the BOSS User Interface application, or through email. In order to receive alerts through the BOSS application, **the logged-on user must be in a group that is assigned the Dispatch permission**. Email alerts can be sent to any BOSS user or email recipient.

A real-time alert for a hit can pop up on the screen at any time when the BOSS application is running, regardless of which screen the user has active. A sound associated with the hit will be played. Alerts will be queued until the user acknowledges them by clicking **OK**. Real-time alerting in the BOSS application can be turned off by clicking on the **Alerts** toggle button on the BOSS Home screen. The settings for real-time alerts can be modified through the Dispatch screen, *(see Section 10, Dispatch)*.



10 Dispatch

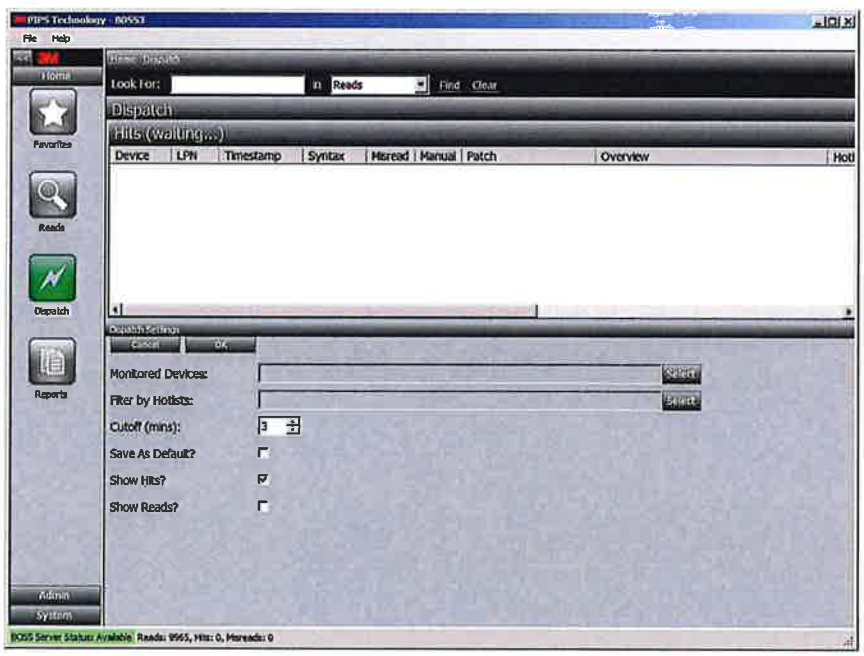
The Dispatch screen is a tool often used by first responder dispatchers. It enables them to easily view hits, monitor reads, and correct license plates as they enter the BOSS system. The information displayed is as near to real time as possible. For ease of viewing, there are three configurations that can be set:

- If only the hits are set to display, they will appear on the whole screen.
- Similarly, if only the reads are set to display, they will appear on the whole screen.
- If the dispatcher is monitoring both hits and reads, then the hits will be displayed on the top half of the screen and the reads will be displayed on the bottom half.

10.1 Dispatch Settings

Dispatch Settings allow you to choose the information shown on the Dispatch screen.

1. Select the **Home** category in the Shortcut bar.
2. Click the **Dispatch** shortcut.
3. Click the **Settings** button in the bottom of the Browse/Edit area.



4. The following settings are available on the Dispatch screen. Change these settings as desired:

   Monitored Devices – Camera sources can be selected or deselected from a pick list to control which ones will supply reads (and resulting hits) to the Dispatch screen. Individual dispatchers can focus on particular camera inputs by selecting/deselecting any combination of sources (one, multiple, or all) for monitoring.

   In large BOSS systems, it may not be practical for a single dispatcher to monitor all sources simultaneously. An organization may choose to assign individual dispatcher personnel to different sources or may select to focus on particular sources during certain time periods or events.

Filter by Hotlists – Hotlists may be selected to only show hits from designated hotlists. If there are no hotlists selected, hits from the monitored devices will be displayed.

Cutoff (mins) – The cutoff setting determines how current from the present time a hit or read must be in order to display on the dispatch screen This setting determines the number of minutes before data is discarded from the on-screen display. The maximum time is 10 minutes.

Save As Default – If checked, the current settings are saved and restored the next time the user logs in. Note that selected devices will always default to the devices where the user is configured to receive notifications in the Hotlist settings. *See additional information on notifications in Section 7.1.1, Configuring Basic Hotlist Settings.*

Show Hits? – If checked, hits will display in rows in the top section of the Dispatch screen as they occur. If this option is deselected, rows of hits are not displayed in this section of the Dispatch screen. However, pop-up alerts will still display for hits, regardless of this setting.

Note: If the **Alert Toggle** button is set to the **Off** position, hits and reads will not display in the Dispatch screen. *See Section 9, Alerts, for additional information.*

Show Reads? – If checked, all reads included in the devices selected in the Monitored Devices field display in the dispatch screen. By default, this option is not selected.

Note: Monitoring reads may slow down the BOSS server. It is recommended that reads are only monitored for diagnostics purposes.

---

5. Click the **Save** button for the changes to take effect.

10.2 Dispatch Hits

For each row, the columns displayed are:

Device – The device where the read originated.

LPN – The license plate characters read in by a camera or manually entered by a user.

Timestamp – Date and time when the read occurred.

Syntax – The state or region of the plate, if available.

Misread – If checked, indicates that the hit resulted from a read that was marked as a misread.

Manual – If checked, indicates that the hit resulted from a manual entry (put in by a BOSS user).

Patch – A thumbnail image of the license plate.

Overview – Color overview picture of the vehicle.

Hotlist – The name of the hotlist from which the hit occurred.

Field1 … Field5 – Fields originating from the hotlist. The content and meaning of these fields vary depending on the composition of the hotlist.

PNC/DL – This field can be used for a driver's license (DL) number in US installations, but primarily used in United Kingdom installations for storing the UK Police National Computer identification number.

10.2 Dispatch Hits *(continued)*

Info – Commonly contains additional text associated with the hit record. When the hotlist source contains additional fields, the information from those fields is all stored in this one field.

Priority – Priority assigned to the hotlist, with a lower number being given a higher priority.

Annotation – Notes associated with the read. Annotations are entered by BOSS users.

10.3 Dispatch Reads

For each row, the columns displayed are:

Device – The device where the read originated.

LPN – The license plate characters read in by a camera or manually entered by a user.

Syntax – The state or region of the plate, if available.

Timestamp – The date and time when the read occurred.

Patch – A thumbnail image of the license plate.

Overview – Color overview image of the vehicle.

Misread – If checked, indicates that this record was marked as a misread.

Hit – If checked, indicates this read resulted in a hit.

Manual – If checked, indicates this read was input manually by a BOSS user, rather than originating from a device.

Annotation – Notes associated with the read. Annotations are entered by BOSS users.

10.4 Manual Entries

There may be times when a read must be manually entered or when a camera does not correctly read a plate. For example, if there was an obstruction between the camera and the plate, then characters may be missed in the read. For this reasons, manual entries can be completed by an authorized user via the Dispatch screen.

10.4.1 Adding a Manual Read

1. From the Dispatch screen, click the **Add** button. The Manual Entry screen appears in the lower half of the Browse/Edit area.

Note: The **Add** button will only be present if the logged in user has the Edit Access permission to reads.

---

2. Enter the plate characters in the LPN field.
3. Click the **Select** button to the right of the disposition field.
4. Select the desired disposition(s) and click the **Save** button to complete the selection.
5. Click the **Save** button to finish saving the manual entry. If the "Manual Entries" device is not being monitored, the manual entry will not appear in the Dispatch screen.

10.4.2 Correcting Reads

1. In the Dispatch screen, double-click on the read to be corrected. The Manual Entry screen appears in the lower half of the Browse/Edit area.
2. Enter the plate characters in the LPN field.
3. Click the **Select** button to the right of the disposition field.
4. Select the desired disposition(s) and click the **Save** button to complete the selection.
5. Click the **Save** button to finish saving the corrected entry.

11 Querying Stored Data

The Reads screen allows for searching and viewing past read records on a local server or on a remote server that has granted access. Reads can be quickly searched by entering a license plate number. This screen also allows for more advanced queries where data can be filtered based on additional fields such as date ranges, location, and radius. Additionally, the Reads screen allows you to perform multiple queries with the use of tabs.

For the queried results returned, there are no limits to the number returned from a local server. To limit the impact on outside systems, there is a limit of 1,000 records returned from a remote server. A maximum of 1000 records will be displayed per page.

Note: Depending on factors such as the size of the BOSS database, the speed of the server, the bandwidth of the connection between client and server, and the parameters of the query, there may be a delay before the results are displayed. A status bar will display that shows that the query progress.

11.1 Wildcards

Wildcards are special characters that represent any alphanumeric character and can be used in searches and queries. Wildcards can make finding a match easier because they can define a portion of the criteria to be ambiguous. Wildcards supported in BOSS are described in the following table.

WILDCARD USED	REPRESENTS
a%	Any values that start with the letter "a"
a	Any values containing "a"
% or *	Any/all values
a_	Any values that are exactly two characters long and start with "a"
_a*b	Any values that have "a" as the second letter and end with "b"
[abc]*	Any values that start with "a", "b" or "c"

11.2 Quick Search Bar

The Quick Search bar is always visible and available on the top of the BOSS screen regardless of the category or shortcut currently selected. This feature allows for quick, simple searches of various BOSS data.

1. Type the value to search for in the Look For field. This value can include wildcard characters. Multiple values can be entered separated by a comma (e.g., ABC123, XYZ234). However, wildcard values cannot be used when searching for multiple values.
2. In the "In" drop-down box select an area to search. The available options are **Reads**, **Hotlists**, **Users**, **Group Users**, **Groups**, **Devices**, and **Sites**. These areas are described below.
3. Click the **Find** link to initiate the search. The results will be displayed in the Browse/Edit area of the screen.

11.2.1 Quick Search Fields

When performing a query using the quick search feature, keep in mind that the search is performed in one significant area that can be selected. The search is then run against the significant field in that area, not all fields in that area. For example, when performing a quick

search in Users, the text entered is compared against the Username field of all user records. However, it is not compared to the display names for users. The following is a list of the fields used in the Quick Search:

SEARCH IN AREA	FIELD USED FOR SEARCH
Reads	LPN
Users	Username
Groups	Group Name
Site	Site Name
Hotlists	Hotlist Name
Group Users	Group Name
Devices	Device Name

11.3 Query Result Navigation Icons

Just above the query results are navigation icons that facilitate moving through the data results. These icons can be very useful for larger result sets, providing an easy way to move through records.

Move to the very beginning of the data results, i.e., the first record.

Move backward through the data results.

Move forward through the data results.

Move the very end of the data results, i.e., the last record.

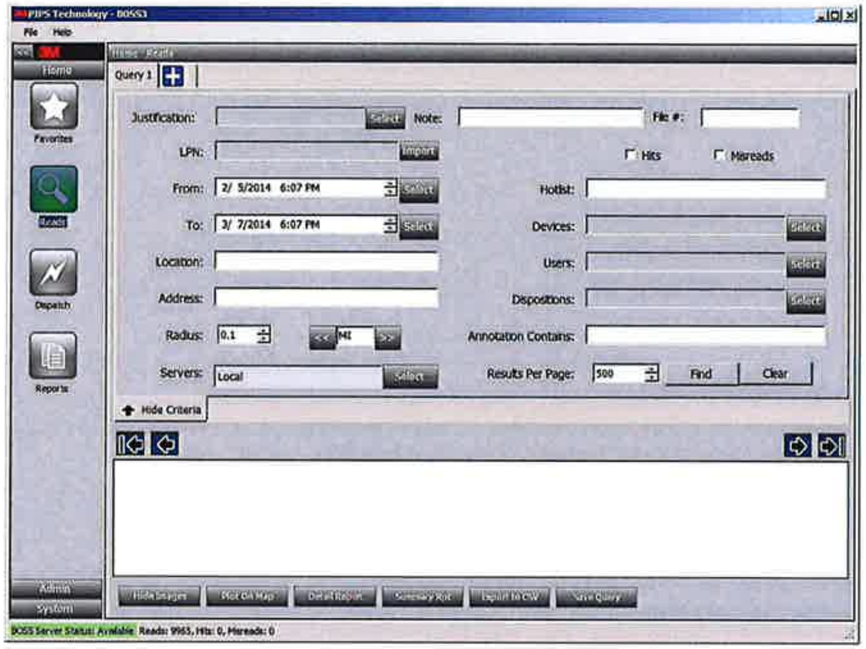
11.4 Advanced Reads Queries

The Reads screen allows for searching and viewing past read records. Reads can be quickly searched by entering a license plate number. The Reads screen also allows for more advanced read queries where data can be filtered based on additional fields such as date ranges, location, or radius. As indicated earlier, a maximum of 1000 records will be displayed.

11.4.1 Performing an Advanced Reads Query

1. Select the **Home** category on the Shortcut bar.
2. Click the **Reads** shortcut.
3. Enter desired query criteria *(see the following section, 11.4.2, Entering Advanced Reads Query Criteria)*. All fields do not have to be filled in. Leaving a query field blank simply means there will be no filtering on that field.
4. Click the **Find** button to run the query.

11.4.2 Entering Advanced Reads Query Criteria



The query criteria fields are:

LPN – Full or partial (using wildcards) license plate number.

From – The start date and time for reads to be retrieved. Either click the **Select** button to display a calendar for quick selection, or type in the date.

To – The end date and time for reads to be retrieved. Either click the **Select** button to display a calendar for quick selection, or type in the date.

Location – The location as entered in the LPCS application *(see the 3M License Plate Capture Software User's Manual for more information).*

Near Address – An address to use as the center of a radius search. The address format depends on the mapping system used but typically street name, house number, city and state, or zip code can be entered.

Radius – When a Near Address filter is entered, the search radius from the center point **must be** entered here.

Servers – Information can be queried from one or more remote BOSS servers. Click the **Select** button to display a list of authorized BOSS servers.

Justifications – Select the justification that best describes the purpose for the query being performed. This field will only be displayed if Justifications have been enabled in the System Parameters. *See Sections 15.3.2, List of BOSS System Parameters, and 15.7, Justifications, for more information.*

Justification Note – Enter any additional information necessary to more accurately document the query being performed. This field will only be displayed if Justifications have been enabled in the System Parameters. *See Sections 15.3.2, List of BOSS System Parameters, and 15.7, Justifications, for more information.*

Hits Only – If checked, only hits are queried.

Misreads Only – If checked, only reads that are marked as misreads are queried.

Hotlist – A search on hits can be limited to a specific hotlist, which can be entered here.

Devices – A query can be narrowed to reads originating from a particular device. Click the **Select** button to display a list of devices, select one or more.

Users – A query can be narrowed to reads originating by a particular user. Click the **Select** button to display a list of users and select one or more.

Note: The username can also be typed in.

Dispositions – A query can be narrowed to reads with a particular disposition. Click the **Select** button to display a list of dispositions. Then select one or more dispositions.

Annotation Contains – If text is entered in this field, only reads that contain the text in the annotation field are queried.

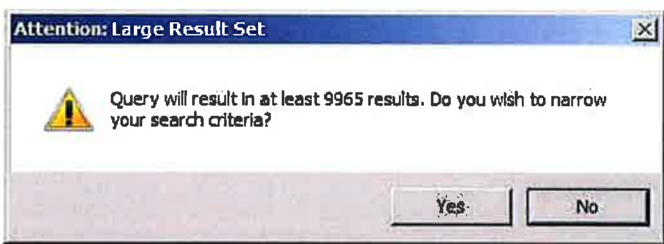
Results Per Page – The maximum number of reads that will be displayed. The default is 500, the maximum is 1,000.

Clear – If clicked, the fields on the current tab will be returned to their default values.

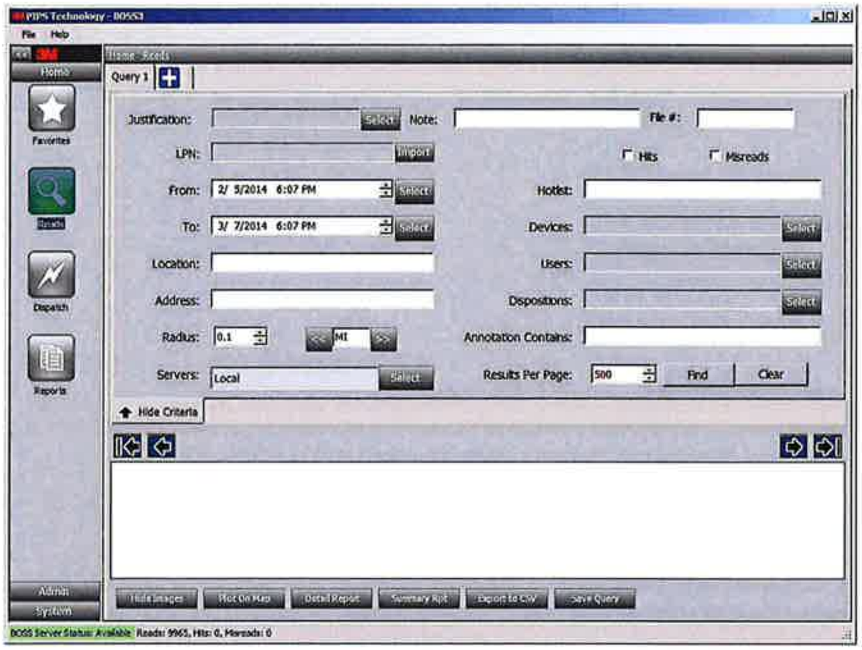
11.4.3 Managing Query Results

With the ability to obtain any number of results from a local server comes the option to narrow the potential results to be returned. If a large number of results will be returned based on the criteria entered, a message is displayed asking if the search criteria should be narrowed. If you select **Yes**, the search criteria is redisplayed offering the chance to make any necessary changes to reduce the results. If you select **No**, the query is performed based on the current criteria selections.

Note: A large number of results can take several minutes to be displayed.



11.5 Multiple Query Tabs



With Query tabs, users can perform multiple queries at a time. By clicking on the last tab, which contains the plus icon, you can access additional Reads Query screens. Enter the desired search criteria on each new screen to obtain additional information through the varying results. Each query can be given a descriptive name by right-clicking on the tab, and obsolete queries can be removed the same way.

11.6 Cross-Referencing External Data

BOSS allows cross-referencing external data, such as DMV information. To query BOSS based on external information, take the following steps:

1. Create a CSV text file containing the license plate numbers to be cross-referenced. **The license plate number must be in the first field.**
2. Open the Reads Query screen.
3. Click the **Import** button next to the LPN field.

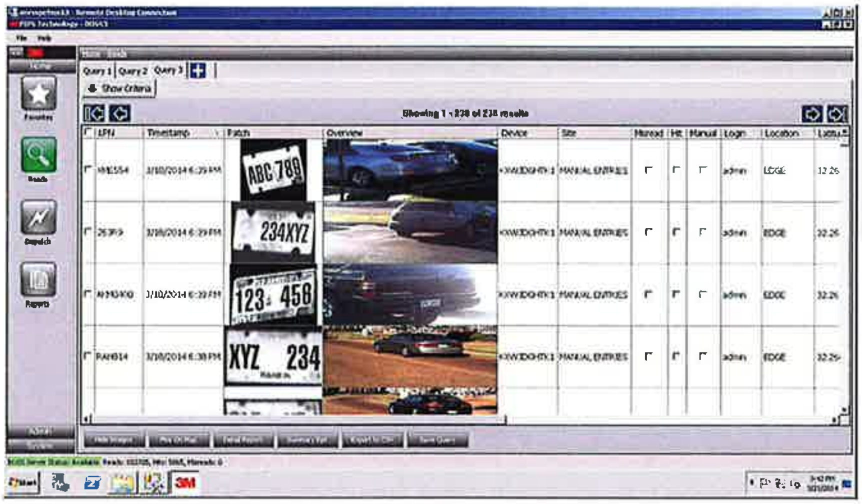
4. Click **Open** to import the plate numbers. A maximum of 50 plate numbers can be referenced at a time. Imported plate numbers will show up in the LPN field:

5. Enter other query criteria, as needed, and click **Find** to run the query.

11.7 Working with Queried Reads

11.7.1 Viewing Query Results

The results of both Quick Searches and Advanced Reads Queries are presented in the same manner.



The columns displayed are:

LPN – The plate text (characters) read in by a camera or manually entered by a user.

Timestamp – The date and time when the read occurred.

Patch – A thumbnail image of the license plate.

Overview – The color overview picture of the vehicle.

Device – The device where the read originated.

Site – The site where the read originated.

Misread – Indicates whether the read was marked as a misread by a user.

Hit – Indicates whether the read is a hit.

Manual – Indicates whether the read was entered manually.

Login – The username logged into the device at the time the read originated.

Location – The location entered in the LPCS system. *See the 3M License Plate Capture Software User's Manual for more information.*

Latitude – The latitude coordinate of the device at the time the read originated.

Longitude – The longitude coordinate of the device at the time the read was originated.

Hotlist – The name of the hotlist that produced the hit.

Field1 … Field5, PCNID, Information – Information from the hotlist that produced the hit.

Annotation – Annotations entered for the read.

Server – The name of the server that has provided this information. This can be a local or remote server.

11.7.2 Query Results Actions

There are several button options available at the bottom of the Reads Query Results screen that offers additional uses of the data results.

Hide Images/Show Images – Used to remove the image columns, patch and overview, from the view. This can be done to provide more room for text fields to be displayed. When clicked, the **Hide Images** button's caption changes to **Show Images.** When the button is clicked again, images will again be displayed.

Plot On Map – When clicked, any selected records will be plotted on a map. One or multiple records can be selected by clicking the checkbox in the first column of the record. To select all of the records, click the checkbox in the headings column.

Detail Report – Click to generate a detailed report of selected reads. To select one or more records, click the checkbox in the first column of the record. To select all of the records on the current page, click the checkbox in the headings column. Use the navigation buttons to move to additional pages to select additional records.

Summary Rpt – Click to get a summary report of selected reads. To select one or more records, click the checkbox in the first column of the record. To select all of the records on the current page, click the checkbox in the headings column. Use the navigation buttons to move to additional pages to select additional records. To include all results choose the **All Results** option in the Reads Summary Detail Report option box.

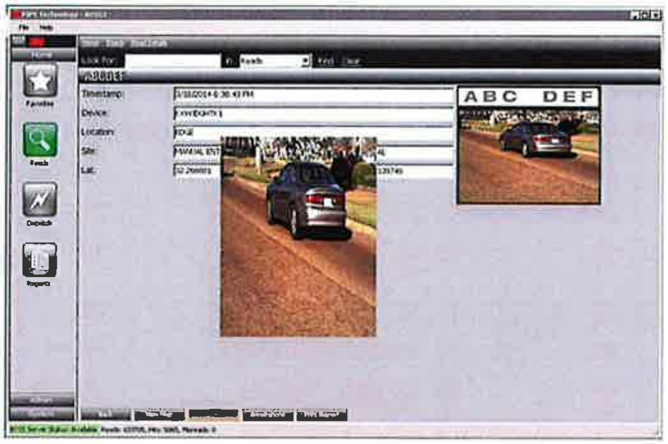
Export to CSV – Click to save the results to a file in a CSV format. Select to save the current page or all results provided. Use the navigation buttons to move to additional pages to select additional records.

Save Query – Click to save the query criteria as a favorite for future use. *See Section 11.8, Favorites, for more information.*

11.7.3 Viewing Read Details

Click a row in the query results to view the details of the record.

The Read Details screen displays the license plate text in the title. The timestamp, originating device, site, and geographical coordinates are displayed below. The plate patch and vehicle color overview images are on the right.



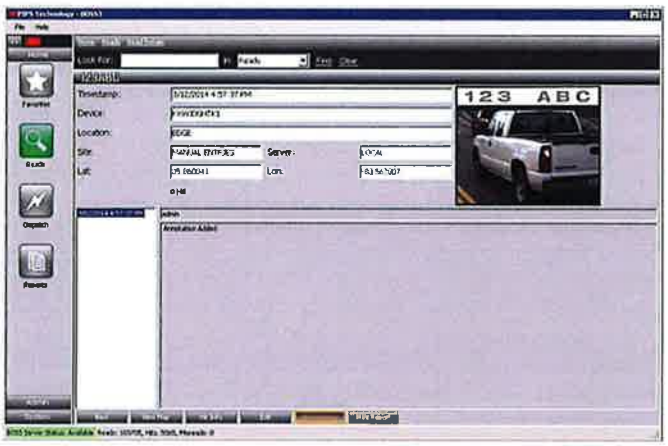
The vehicle color overview picture can be enlarged by clicking on the picture. Use a mouse scroll wheel or the cursor up and down keys to resize the image. Left-click on the enlarged image to close. Right-click on the image to copy the image to the Windows Clipboard.

If the read is a hit, details of the hit can be displayed by clicking on the **Hit Info** button at the bottom of the screen.

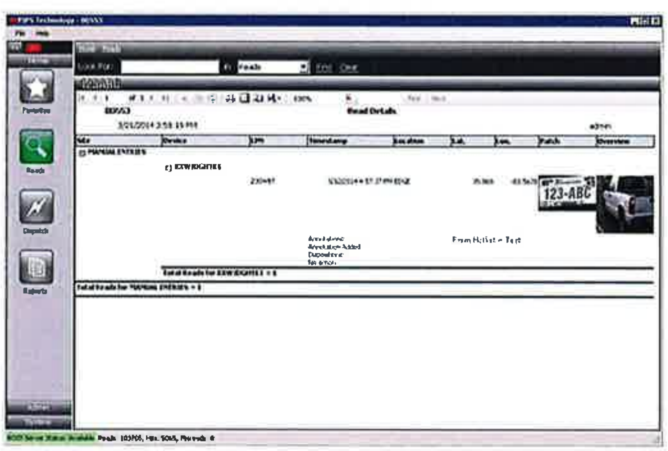
A map plotting the location where the read occurred can be displayed by clicking on the **View Map** button.

11.7.3 Viewing Read Details *(continued)*

Use the **Edit** button to correct the plate text and/or assign a disposition and annotation to the read. Click on **Save** to save the changes. The plate text can also be marked as misread if the read information is found to be incorrect.



Annotations associated with the read can be viewed by clicking on the **Annotations** button.



A report containing the read's details can be printed by clicking on the **Print Report** button.

11.8 Favorites

Favorites are read queries that use specified criteria, which have been saved. Favorites can be reused, which allows the user to quickly perform frequently needed queries without having to define the parameters each time. Favorites are specific to each user.

11.8.1 Creating a New Favorite

1. Select **Home** on the Shortcut bar to access its icons.
2. Click on the **Read** shortcut.
3. Enter the desired query parameters in the Browse/Edit area (e.g., data range, location, radius, servers).
4. Click the **Go** button to run the query.
5. When the query results window appears, click the **Save Query** button.
6. A dialog box will appear, prompting for a name. Enter a descriptive name for the new favorite.
7. Select the **Use Relative Date Range** option if desired.

   Use Relative Date Range Option – If this option is selected when saving a query, and when the resulting favorite query is run in the future, it will use a From and To date and time range relative to the From and To date and time entered for the original query. It will not use the actual range entered in the original query. Also, it is important to remember that the time span between the From and To date and the time range used is relative to the date and time when the original query was run.

   Consider a query that is saved as a favorite and originally defined on 8/9/20xx to search reads between 8/02/20xx and 8/8/20xx (the prior week). If the Relative Date Range option is selected, the query is saved to always run against the prior week rather than those actual dates. If the Favorite option is invoked on 12/3/20xx, it will return results from 11/26/20xx through 12/2/20xx. It is important to note that the results will be relative to the actual time of the original query and when it is rerun. Suppose you run a query at 5 pm today to search for reads occurring between 9 am and 5 pm and save it as a favorite. When you run the query again tomorrow, it will search for reads that occurred eight hours **before** the current time, which may not necessarily fall between 9 am and 5 pm.

8. Click **OK** to complete. The query definition is now saved as a favorite and can be accessed at any time.

11.8.2 Activating a Favorite

1. Select the **Home** category in the Shortcut bar (if not already selected).
2. Click the **Favorites** shortcut.
3. A listing of all favorites is displayed in the Browse/Edit area.
4. Click the desired favorite. (The selected favorite will be highlighted in yellow.)
5. Click the **Go** button in the bottom area of the Browse/Edit area.
6. The query results will appear in the Browse/Edit area.

11.8.3 Deleting a Favorite

1. Select the **Home** category in the Shortcut bar (if not already selected).
2. Click the **Favorites** shortcut.
3. A listing of all favorites is displayed in the Browse/Edit area.
4. Click the desired favorite. The selected favorite will be highlighted in yellow.
5. Click the **Delete** button in the bottom area of the Browse/Edit area.
6. Press **Yes** to confirm deletion.

12 Reports

Several reports are included, automatically, with a new BOSS installation. These reports are available for use as soon as a BOSS Administrator assigns role permissions to the reports.

12.1 Running a System Report

1. Select the **Home** category on the Shortcut bar.
2. Click the **Reports** shortcut.
3. The Browse/Edit area will display a list of available reports. (Reports to which the user does not have permissions are not displayed.)
4. Click the desired report. The selected report is highlighted in yellow. Parameters for the report appear in the bottom of the Browse/Edit area.
5. Select **Date Range**. All reports call for From and To dates to define the time range for the report data. By default, the values in these fields define a report for the most recent two weeks. You can change these dates by typing different information into these fields, using the **Up/ Down** arrow keys to the right of the field or by clicking the **Select** button to the right of the field and selecting a date on the calendar and then clicking the **Save** button.
6. Some reports also permit you to filter report results by user(s). For example, the pictures report, which reports pictures taken in LPCS, allows you to define one or more users to report on.
7. Once desired parameters are selected for the report, click the **Go** button. The report screen immediately displays, indicating that the server is generating the report until results are displayed.

12.2 Viewing and Printing Reports

The Report screen displays the date and time the report was generated and the title of the report in the heading area. When you place your mouse above a shortcut on the Report Shortcut bar, a label appears indicating what the shortcut button does. Note that some of the buttons on the Shortcut bar are not relevant to BOSS reports and are therefore disabled.

The Report Results Shortcut bar icons are as follows:

First Page – Return to the first page of the report.

Previous Page – Go to the previous page of the report.

Page Input – In this text box, type in a particular page number to bring up on screen.

Next Page – Go to the next page of the report.

Last Page – Go to the last page of the report.

Stop Rendering – This button can be used to cancel the report processing. This can be helpful if a large report was initiated, but is no longer desired.

Refresh – Refresh the report using the most current BOSS data.

Print – Print the report.

Print Layout – Toggle between available print layouts.

12.2 Viewing and Printing Reports *(continued)*

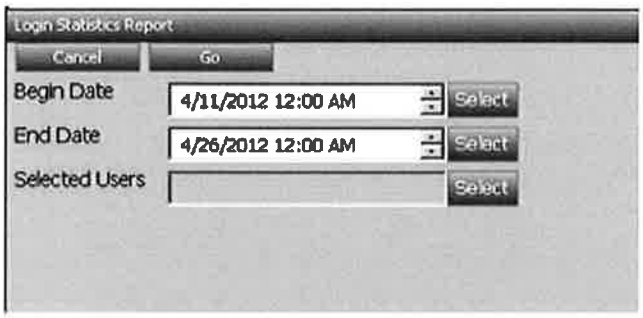
Page Setup – Choose among the options for standard page setup, such as page orientation, and paper size.

Save As – Excel/PDF/Word – Save the current results to a Microsoft Excel (.xls), an Adobe Portable Document Format (.pdf) or a Microsoft Word (.doc) document.

Width Zoom Setting – This drop-down list allows you to select a zoom view for the report results on the screen.

12.2.1 Viewing the Login Statistics Report

1. Select the **Admin** category on the Shortcut bar.
2. Click the **Devices** shortcut.
3. Click the **Logs** button at the bottom of the screen.



4. Click **Go** to view the Login Statistics Report.

   Begin Date – Select the start date for the report.

   End Date – Select the end date for the report.

   Selected Users – Select the users to include in the report. Click the **Select** button. Click the checkbox of the desired user. Click on the **Save** button.

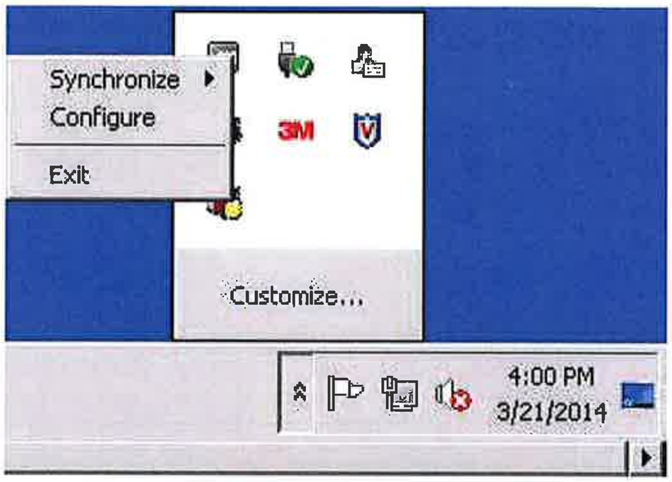
13 Client Tools

The Client Tools utility is used to transfer any necessary files needed for a shift from BOSS to an LPCS system that is being run in the Disk Sync mode. After the completion of a shift, Client Tools can then be used to transfer read data files captured during a shift into BOSS. The utility is configurable and processes files stored on a local, network, or USB flash drive. Like Smart Client, the Client Tools utility does not have to be run on the BOSS server; it can be configured to access the server via an IP Address.

Client Tools does not have a customary interface. Once the utility is started, the Client Tools icon will appear in the Windows System Tray.

Before use, Client Tools must be configured, which is described in Appendix 17. Once the Client Tools has been configured, it can now be used to synchronize information between BOSS and LPCS:

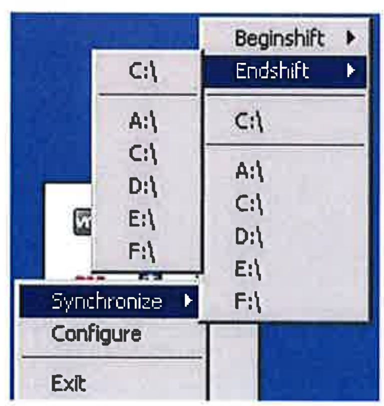
1. To start, right-click on the **Client Tools** icon.



2. Select **Synchronize.** The next menu displayed is divided into three sections.

   a. The first section allows the user to select either **Create Begin Shift Files or Synchronize End Shift Files.** When either option is selected, the next menu is displayed. It is divided into two sections; it is the bottom two sections of the previous menu and functions the same way.

   b. The second section displays the path defined during configuration. This is a shortcut to perform Begin Shift and End Shift at the same time, storing the Begin Shift files in the defined location and processing the End Shift files at the defined location. If there are no End Shift files to process, this feature will be complete after the Begin Shift file is created. No error message will be displayed if the End Shift files are not found.



   c. The last section lists the drive letters currently on the workstation. If one is selected, Client Tools will perform a Begin Shift first and store the files at the root of the drive selected. Then Client Tools will check to see if there are End Shift files at that location. If found, the files will be processed. If not found, the synchronization process is complete. No error message will be displayed. This is an additional option if the configured drive is not currently available.

Note that once End Shift files have been processed, they are deleted.

14 Archiving Data

It is possible to archive reads that have accumulated in the BOSS database. Based on settings that are configurable in System Parameters, reads that meet the specified criteria are transferred from the main BOSS database to an archived BOSS database. *(See Section 15.3.2, List of BOSS System Parameters, for additional information on configuring this feature.)*

Once enabled, this process is handled by the BOSS server. There should be no noticeable difference to a user logged into a BOSS Smart Client when reviewing or reporting on stored reads. The only indication in the BOSS Smart Client that reads have been archived will be on the BOSS Home screen. The user will be able to see a calculable difference between the reads and hits counts compared to the total reads and total hits counts. The difference between the values will be the number of reads and hits stored in the archived database.

15 System Settings

15.1 Sessions

The Sessions screen allows for viewing the current list of logged-on BOSS users. Each login on each computer utilizes a concurrent license of the software. Since BOSS is licensed per concurrent active session, a BOSS Administrator may need to have a session disconnected in order to release a session license. A BOSS Administrator can force a session disconnect in the Sessions screen.

Note: BOSS allows a single "admin" login to access BOSS even if the number of concurrent sessions has been exhausted. *Please see Section 2.1, BOSS Administrator Login, for more information about the "admin" username.*

15.1.1 Viewing and Disconnecting Sessions

1. Select the **System** category on the Shortcut bar.
2. Click the **Sessions** shortcut. A list of current user sessions appears in the Browse/Edit area.
3. The heading in the Browse/Edit area indicates the total number of current sessions.
4. Click on a session to see details in the bottom half in the Browse/Edit area.
5. To disconnect, click the **Disconnect** button that appears in the detail area, and click **OK.**

Note: You cannot disconnect your own session in this manner. To disconnect your own session, simply log off the BOSS application.

15.1.2 Workstation Power Management and Sessions

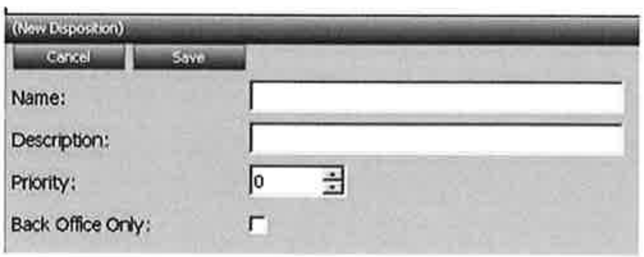
Using Windows Power Management to hibernate or suspend a workstation running the BOSS Smart Client will cause the session in BOSS to be terminated after five minutes. When the workstation is resumed from hibernation or a suspended state, the user will have to log in to BOSS again.

15.2 Dispositions

Dispositions are pre-defined classifications that can be assigned to hits. "Arrest Made," "Vehicle Recovered," "Surveillance Established" are examples of dispositions. A BOSS Administrator is able to define any number of dispositions for her system. Users can then use those dispositions to specify the action taken or the status of the hit. A new BOSS system will have a Default Disposition category that includes one disposition of "No Action." Additional categories can be defined as needed.

15.2.1 Defining a New Disposition

1. Select the **System** category on the Shortcut bar.
2. Click the **Dispositions** shortcut. A list of all current dispositions appears in the top of the Browse/Edit area.
3. Click the **New** button in the bottom of the Browse/Edit area.
4. Enter a name for the disposition. If adding it to the default category, simply enter the name of the disposition. If adding it to a new category, the format of the name should be [Category : Disposition Name], i.e., **Auto :Vehicle Recovered.**
5. Enter a **Description** for the new disposition.
6. Specify a **Priority** for the disposition. (A lower number means a higher priority.)
7. Select the **Back Office Only** option if the disposition should not be available only in the Correct Reads screen in BOSS, and not exposed in LPCS.



15.2.2 Deleting a Disposition

1. Select the **System** category in the Shortcut bar (if not already selected).
2. Click the **Dispositions** shortcut.
3. A list of all dispositions is displayed in the Browse/Edit area.
4. Click the desired Disposition. The selected disposition will be highlighted in yellow.
5. Click the **Delete** button in the bottom area of the Browse/Edit area.
6. Press **Yes** to confirm deletion.

15.3 System Parameters

System Parameters allow for configuration parameters for a BOSS system. System parameters only need to be configured during initial system configuration and normally do not need to be modified again after that.

15.3.1 Editing System Parameters

1. Select **System** from the left Shortcut bar.
2. Click on the **Parameters** button in the Shortcut bar.
3. Click on the desired parameter in the right Browse/Edit window. The bottom pane of the Browse/Edit window will display the entry field for the selected parameter.
4. Modify the parameter value as desired and click the **Save** button.

15.3.2 List of BOSS System Parameters

arc_ActiveRetentionDays – This setting dictates how long reads will be maintained in the BOSS database. After reads have been stored for this time, they will be moved to the archived database, creating space for additional reads in the main database. The default setting is 730 days but can be varied based on the size and needs of the system.

arc_ArchiveDBRetentionDays – This setting dictates how many days to retain an archived database. After an archived database has been stored for this time it will be removed, creating space for additional archived databases. The default setting is 0 days, which indicates that the archived databases will never be removed, but the number of days can be modified based on the size and needs of the system.

arc_DatabaseLocation – This setting allows the user to specify where the archived databases should be saved. A blank entry will save them in the SQL default location.

arc_Enabled – To allow the BOSS server to archive aged reads and free up space, enable archiving by setting this to 1. When archiving is not desired, this setting should be 0.

arc_EndOfMonthCutOff – This setting forces a restriction on the size of the archived databases, so that nothing will be added after the end of each month. The default setting is disabled (0). To enable the setting, change the value to 1.

arc_MaxSize – This setting allows the Administrator to determine the number of reads that can be stored in the archived database. The default value is 1 million and can be varied based on the size and needs of the system. Once an archived database has reached this maximum number of records, a new archived reads database will be created.

audit_Justification_FileNumberRequired – When this setting is enabled (1), users performing read queries are required to enter a file number.This information will also be listed in the audit report. The default setting is disabled (0).

audit_Justification_NotesRequired – When this setting is enabled (1), users performing read queries are required to enter a justification note. This information will also be listed in the audit report. The default setting is disabled (0).

audit_JustificationEnabled – When this setting is enabled (1), users performing read queries are required to select a pre-defined justification. This information will also be listed in the audit report. The default setting is disabled (0).

data_CaptureUsageStatistics – When this setting is enabled (1), information sent from a LPCS device that has been modified due to Privacy settings will still be utilized to generate usage statistic reports. The default setting is disabled (0).

hls_HotListDeltas – When this setting is enabled (1), updated hotlists will be deployed in full. Changing the setting to disabled (0) will cause only the changes made in the updated hotlists to be deployed.

15.3.2 List of BOSS System Parameters *(continued)*

Proxy_uri/proxy_username /proxy_password/proxy_domain – These settings are only necessary if there is a proxy server involved that requires authentication for connection. Enter a valid Uniform Resource Identifier (URI), username, password, and domain in the associated fields to allow communication through the proxy server. Consult the network Administrator for proxy authentication information

purge_Minutes – This setting is the time, in minutes, between each session of purging or archiving. The default value is 15 minutes and is configurable to any value of 1 minute or greater.

purge_ReadCount – This setting is the number of records to be processed by the purging or archiving process per session. It can be any value, but setting it according to system limitations is recommended because the process can be resource intensive if set too high.

readQuery_fromDate – This setting allows the user to adjust the default From date on the Reads Query screen. Any value can be entered and it is used to decrement from today. Example – a value of 7 would result in a From date seven days earlier than today.

readQuery_toDate – This setting allows the user to adjust the default To date on the Reads Query screen. Any value can be entered and it is used to incremented from today. Example – a value of 7 would result in a To date seven days later than today.

rq_ReaperHours – This setting manages how long to retain a temporary database table created when running certain read queries. This allows the user to continue to review the results of those queries for a longer time. The default is a minimum of 48 hours, and there is no maximum value.

smtp_SenderName – In order for the BOSS server to send alerts to email addresses, the SMTP settings must be configured correctly. The SMTP sender field should contain the username that will appear in the From field on an email generated by the BOSS system.

smtp_Server – The name or IP address of the SMTP server should be entered here. The name or address used here must be one by which the SMTP server can be reached from the BOSS server. This field must be populated correctly in order for the BOSS system to send any alerts to email addresses.

smtp_UserName/smtp_password – The SMTP username and password fields should contain a valid SMTP username and associated password for sending alerts through the SMTP (email) server. Normally, a BOSS Administrator coordinates with his SMTP Administrator to create a special SMTP user that will be used exclusively for BOSS alerts.

smtp_SSL – If Secure Sockets Layer (SSL) is used on your SMTP server, the value of this field should be set to 1. If you do not use SSL, this field should be set to 0.

smtp_SubjectTemplate /smtp_AlertTemplate – These fields allow a BOSS Administrator to customize the verbiage in an alert email subject line and message body using any combination of static text and field variables from the hit that generated the alert. Each field (from the hit) is enclosed in brackets.

> **smtp_SubjectTemplate** – This field sets the subject line of alert emails generated by BOSS.
>
> **smtp_AlertTemplate** – This field determines the text in the body of the alert email.

For example, the following entry in the smtp_SubjectTemplate field incorporates both static text and a BOSS field variable as well: **BOSS alert FROM [SRC]**

The static text "BOSS alert FROM" will always be constant in each SMTP alert. However, the value of [SRC] will vary depending upon the source device where the hit originated. If the hit originated from a source device named "Camera2," for instance, the complete subject would read: "BOSS alert FROM Camera2".

The following tokens can be used in the templates, and for each individual alert they will be replaced with the actual value from the hit record:

TOKEN	DESCRIPTION
[LPN]	license plate
[STE]	site
[SRC]	device
[LOC]	location
[LAT]	latitude
[LON]	longitude
[HOT]	hotlist name
[FD1]	field1
[FD2]	field2
[FD3]	field3
[FD4]	field4
[FD5]	field5
[PNC]	PNCID/DL
[INF]	information
^	new line

15.3.3 Branding

BOSS allows the BOSS Administrator to upload a logo image and a welcome message that is displayed to BOSS users on the Home screen. To define the image and message:

1. Select **System** from the left Shortcut bar.
2. Click on the **Parameters** button in the Shortcut bar.
3. Click on **Branding.**
4. If needed, click **Default** to remove current custom settings.
5. Pick the desired logo image using the **Browse...** button.
6. Type in a message in the Welcome Message box.

Browse – Select an image file (JPEG, GIF, BMP) to be displayed on the home screen. The largest recommended image size is 120 by 380 pixels.

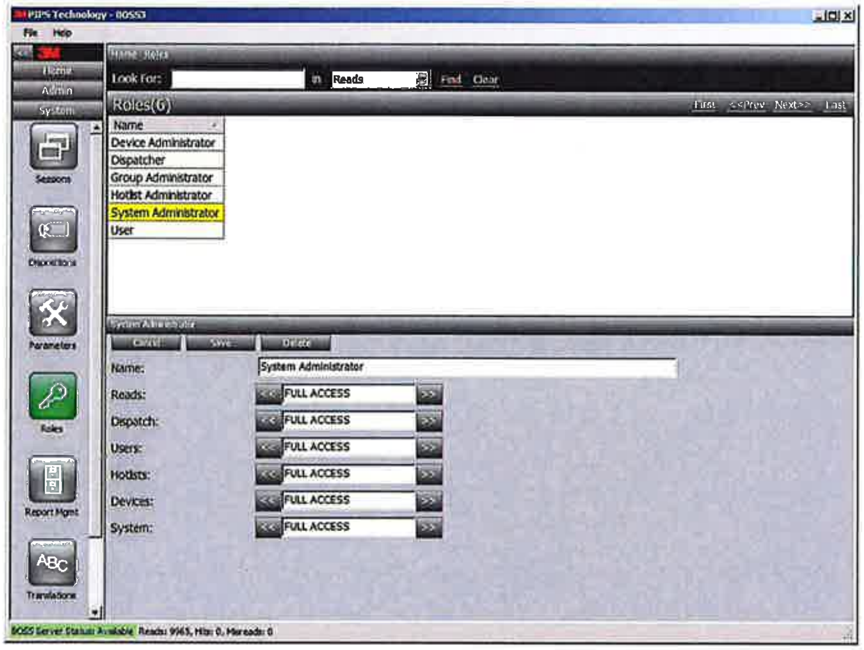
Default – Remove the custom logos and texts.

Welcome Message – A custom welcome message can be typed in here.

7. Click **OK** to save changes, or Cancel to discard changes.

15.4 Roles

In addition to the default roles that are automatically created by BOSS, the Administrator can create and configure custom roles as needed. *See Section 4.2, Permissions, for more information.*



15.4.1 Adding New Roles

1. Select the **System** category on the Shortcut bar.
2. Click the **Roles** shortcut. The Browse/Edit area will display a list of existing roles.
3. Click on the **New** button. The New Role entry window will be displayed in the bottom of the window.
4. Enter the name of the new role and assign the desired permissions.
5. Click the **Save** button.

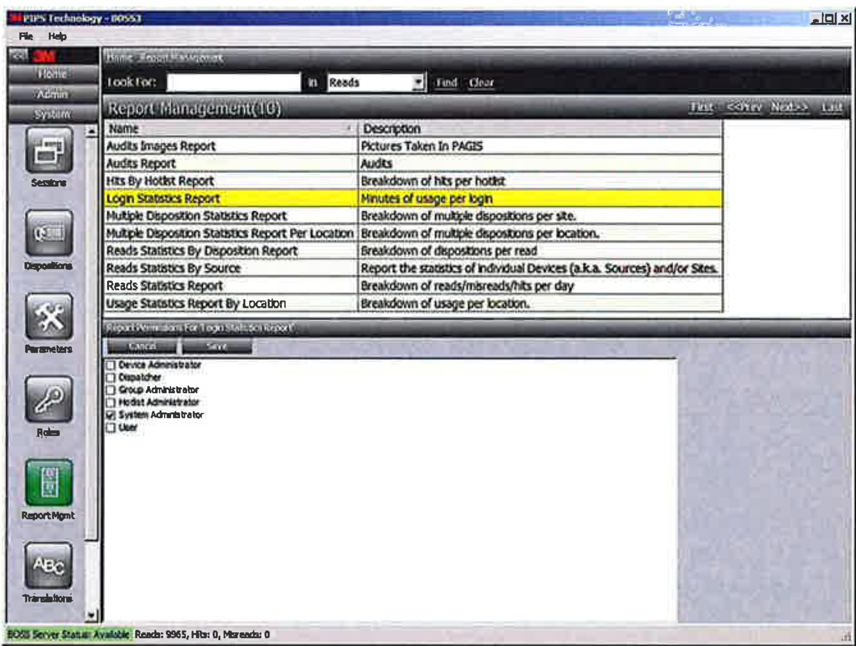
15.4.2 Deleting Roles

1. Select the **System** category on the Shortcut bar.
2. Click the **Roles** shortcut. The Browse/Edit area will display a list of existing roles.
3. Click on an existing role and the edit window will be displayed in the bottom of the window.
4. Click the **Delete** button. Click **Yes** when prompted to complete the operation.

15.5 Report Management

15.5.1 Assigning Permissions to Access Reports

1. Select the **System** category on the shortcut bar.
2. Click the **Reports Mgmt** shortcut. The Browse/Edit area will display a list of available reports.
3. Select a report by clicking the name in the list. The selected report will be highlighted in yellow.
4. Current report permissions for the type of report chosen display in the bottom of the Browse/Edit area. Each BOSS role is listed along with a checkbox. Click a role in the list to select. Click a second time to change an unchecked box to a checked box.
5. After selecting the desired permissions for the report, click the **Save** button.

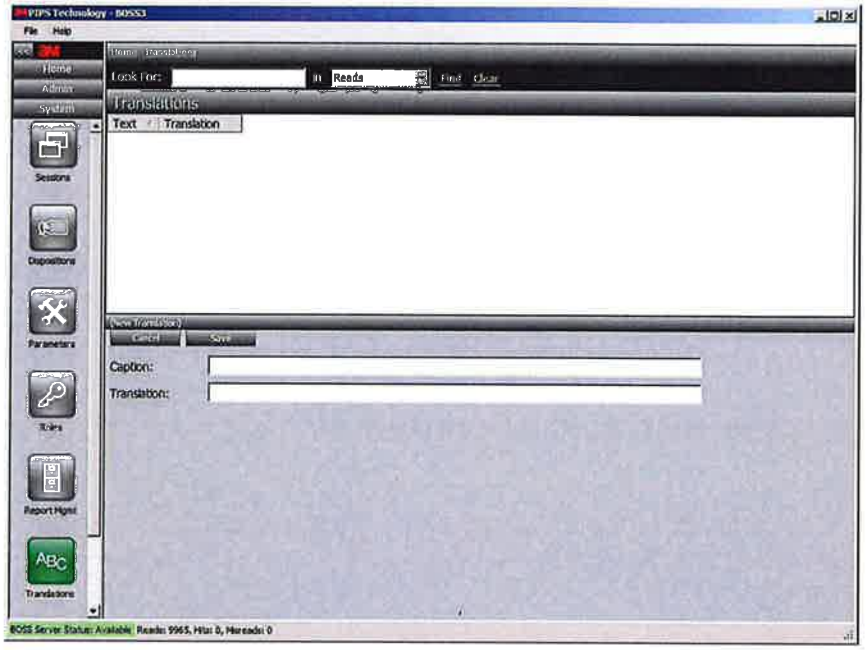


15.6 Translations

Across various organizations and agencies, terminology related to BOSS can differ significantly. For this reason, a new function added in the BOSS version 3 series gives customers flexibility in naming conventions used in the application. The Translations function provides for changing wording on BOSS screens, which allows a customer to tailor screen labeling to correspond to their own vernacular. Text items in the translations editor correspond to labels on BOSS screens. Authorized users can change these text items as necessary.

Note: This feature is not intended as a replacement for language-specific versions of BOSS. *For international versions of BOSS, please contact 3M Technical Support.*

15.6.1 Entering a New Translation



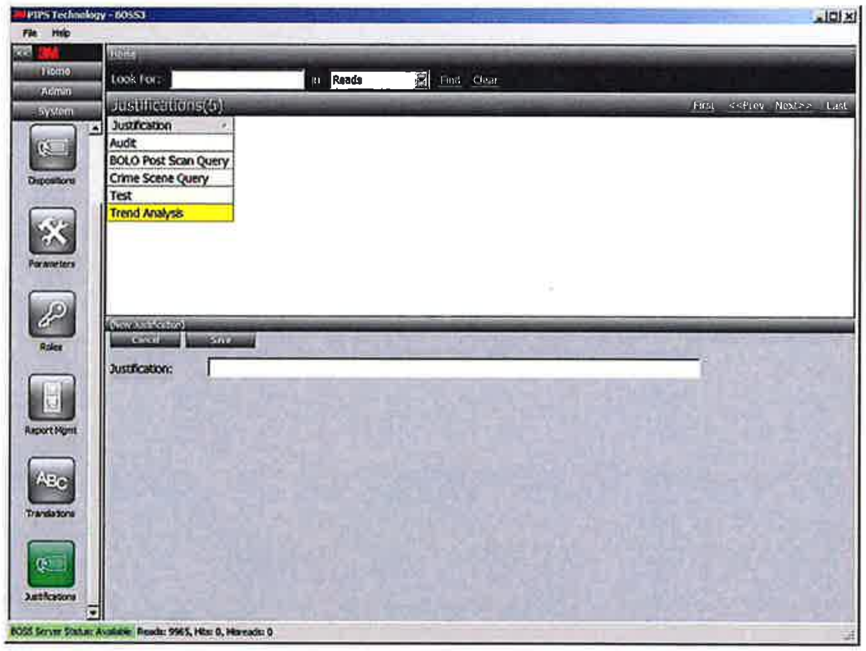
1. Select the **System** category on the Shortcut bar.
2. Click the **Translations** shortcut. A list of all current translations appears in the top of the Browse/Edit area.
3. Click the **New** button and the new Translations Entry screen appears in the bottom area.
4. Enter an existing label from the BOSS application in the Caption field, using the exact case and spelling that normally appears on the screen.
5. Enter the desired replacement text in the Translation field.
6. Click the **Save** button to complete the operation.

Note: The user must log off and on again for translation to take effect in the current session.

For Example: A customer preferring to see a label of "Plate" where the software normally uses the term "LPN" would use the translations feature to create the replacement for their installation. The translation Entry Caption field would contain "LPN," while the Translation field would contain the replacement term "Plate."

15.7 Justifications

To ensure that sensitive information is being kept secure, systems can be configured to require that users who are performing queries on reads have a valid reason for doing so. Enabling the audit_JustificationEnabled parameter requires users to justify their reason for querying reads. There are five justifications created by default: Audit, BOLO Post Scan Query, Crime Scene Query, Test and Trend Analysis. These queries will also be documented in audit reports.



15.7.1 Entering a New Justification

1. Select the **System** category on the Shortcut bar.
2. Click the **Justifications** shortcut. A list of all existing justifications appears in the top of the Browse/Edit area.
3. Click on the **New** button. The Justifications Entry screen appears in the bottom area.
4. Enter a justification. There is no validation on the entry for this field.
5. Click the **Save** button to complete the operation.

15.7.2 Deleting Justifications

1. Select the **System** category on the Shortcut bar.
2. Click the **Justifications** shortcut. A list of all existing justifications appears in the top of the Browse/Edit area.
3. Click on the justification to be deleted. The Justifications Edit screen appears in the bottom area.
4. Click the **Delete** button. Click on **Yes** when prompted to complete the operation.

16 Appendix: System Requirements

16.1 *Minimum* System Requirements

Please note that the minimum requirements are the *least* resources needed to run the software. We fully expect 3M Back Office System Software to run in these environments. However, the user may experience periods of slowness. There may also be other environmental factors that could impact the application's performance such as networks, the utilization of resources by other processes, etc.

16.1.1 Smart Client Minimum System Requirements

If the Smart Client is installed on a workstation, the minimum system resources needed for installing and running the 3M BOSS 3.2 or above Smart Client are:

- Pentium-compatible PC at 1.0 GHz
- Windows Vista, Windows 7, or Windows 8
- 1 GB of RAM
- 32-bit SVGA display at 1024 x 768 pixels
- 1 GB of hard drive space
- Keyboard and mouse

16.1.2 BOSS Server Minimum System Requirements

If 3M BOSS 3.2 or above is being run on a dedicated system, the minimum system resources needed for installing and running the BOSS Server are:

- Intel Xeon Quad Core CPU at 2.0 GHz
- Windows Vista, Windows 7, or Windows 8, 64-bit mode
- 8 GB of RAM
- 1 GB of hard drive space
- Microsoft SQL Server 2008 Express Edition, on a separate machine

If 3M BOSS 3.2 or above is being run on the same system as the SQL Server, the minimum system resources needed for installing and running both are:

- Intel Xeon Quad Core CPU at 2.0 GHz
- Windows Vista, Windows 7, or Windows 8, 64-bit mode
- 16 GB of RAM
- 1 GB/20,000 reads of hard drive space
- Microsoft SQL Server 2008 Express Edition, with memory usage constrained

16.1.3 SQL Server Minimum System Requirements

If SQL Server is being run on a dedicated system, the minimum system resources needed for installing and running the SQL Server are:

- Intel Xeon Quad Core CPU at 2.0 GHz
- Windows Vista, Windows 7, or Windows 8, 64-bit mode
- 16 GB of RAM
- 1 GB/20,000 reads of hard drive space
- Microsoft SQL Server 2008 Express Edition

16.1.4 Client Tools Minimum System Requirements

The minimum system resources needed for installing and running the 3M BOSS 3.2 series Client Tools are:

- Pentium-compatible PC at 1.0 GHz
- Windows Vista, Windows 7, or Windows 8
- 1 GB of RAM
- 32-bit SVGA display at 1024 x 768 pixels
- 1 GB of hard drive space
- Keyboard and mouse

16.2 Recommended System Requirements

16.2.1 Smart Client Recommended System Requirements

The recommended system requirements for installing and running the 3M BOSS 3.2 series Smart Client are:

- Pentium-compatible PC at 1.0 GHz
- Windows Vista, Windows 7, or Windows 8
- 2 GB of RAM
- 32-bit SVGA display at 1024 x 768 pixels
- 1 GB of hard drive space
- Keyboard and mouse

16.2.2 BOSS Server Recommended System Requirements

If the 3M BOSS 3.2 or above service is running in a dedicated environment, the recommended system requirements for installing and running the 3M BOSS Server are:

- Intel Xeon quad-core CPU at 2.0 GHz or faster
- Windows Server 2008 Standard Edition in 64-bit mode
- 16 GB of RAM
- SCSI or SAS hard drives at 10,000 RPM

- 1 GB of hard drive space
- Microsoft SQL Server 2008 R2 Standard Edition, on a separate system

If the 3M BOSS 3.2 or above is being run on the same system as the SQL Server, the recommended system requirements for installing and running both are:

- Intel Xeon quad-core CPU at 2.0 GHz or faster
- Windows Server 2008 Standard Edition in 64-bit mode
- 32 GB of RAM
- SCSI or SAS hard drives at 10,000 RPM
- 1 GB/20,000 reads of hard drive space
- Microsoft SQL Server 2008 R2 Standard Edition, with SQL memory usage constrained

16.2.3 SQL Server Recommended System Requirements

If the SQL Server is running on a dedicated system, the recommended system requirements for installing and running it are:

- Intel Xeon quad-core CPU at 2.0 GHz or faster
- Windows Server 2008 Standard Edition in 64-bit mode
- 32 GB of RAM
- SCSI or SAS hard drives at 10,000 RPM
- 1 GB/20,000 reads of hard drive space
- Microsoft SQL Server 2008 R2 Standard Edition

16.2.4 Client Tools Recommended System Requirements

The minimum recommended system requirements for installing and running the 3M BOSS series Client Tools are:

- Pentium-compatible PC at 1.0 GHz
- Windows Vista, Windows 7, or Windows 8
- 2 GB of RAM
- 32-bit SVGA display at 1024 x 768 pixels
- 1 GB of hard drive space
- Keyboard and mouse

17 Appendix: Installation and Configuration

This section is intended for authorized personnel in installation and configuration of a BOSS system. The information in this guide is organized sequentially, in the order that steps would be performed when initially setting up a new BOSS system, with the first section describing the software installation process, and the subsequent sections describing configuration options for a BOSS system.

Upon initial installation of a new BOSS system, the BOSS server application must be configured using the BOSS Controller application. BOSS Administrators may also find the need to modify configuration settings after the system has already been in use. Therefore, the configuration section can be used as an ongoing reference for authorized personnel responsible for maintaining the system.

IMPORTANT NOTE: It is critical that **only an IT Administrator or other knowledgeable personnel** attempt configuration modifications to a BOSS system. Incorrect configuration settings can cause serious issues with operation and/or adversely affect data integrity. When in doubt, you should consult 3M Technical Support before making system configuration changes.

17.1 Installing the BOSS Server Application Files

17.1.1 Running the Installer

This guide assumes that the Microsoft SQL Server 2008 instance for BOSS has already been installed and is available. If the SQL Server is not available, *stop now and continue installation after the SQL Server has been installed.* To install the Microsoft SQL Server, please follow the instructions provided by Microsoft.

Note: 1. It is not recommended that the installation be performed over a remote desktop connection.

2. It is recommended that antivirus utilities be disabled during the install.

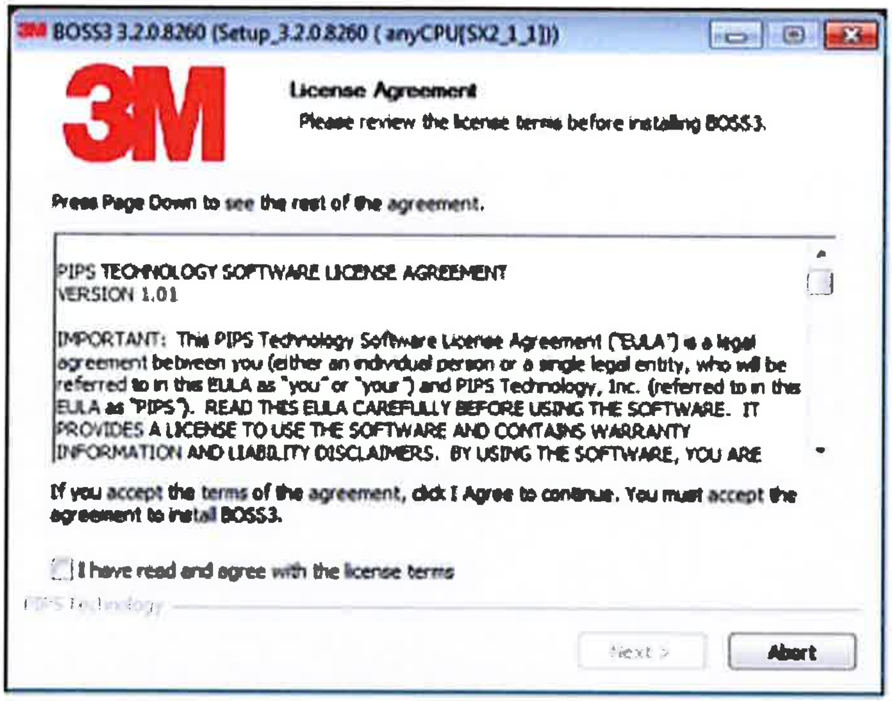
To commence the installation:

1. Select the link supplied by 3M to the BOSS 3.2 installation application.
2. Run the BOSS 3.2 Setup executable.

Note: Right-click on the installer icon and select **Run As Administrator**.

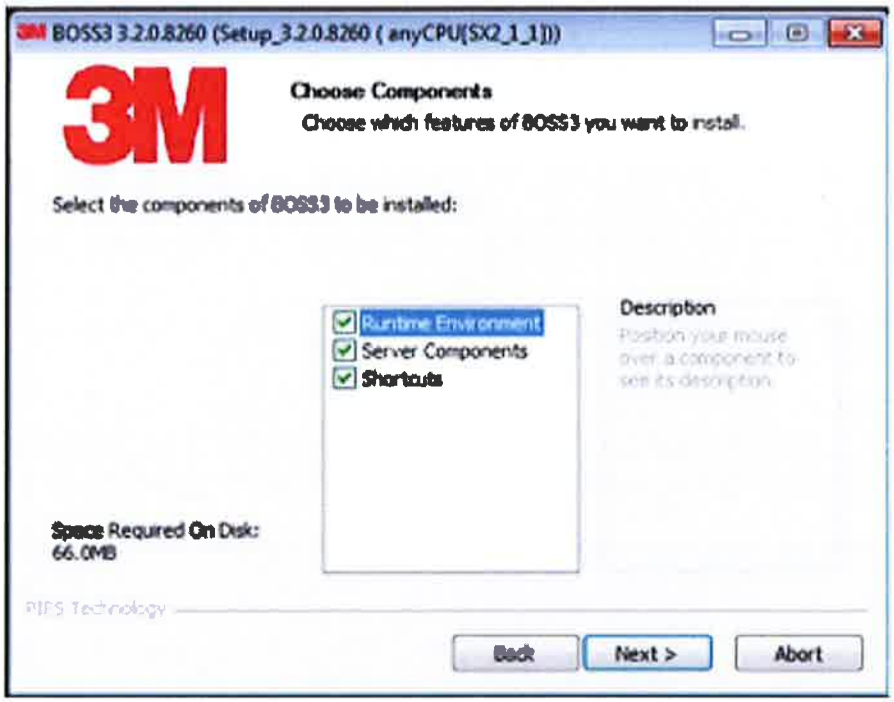
17.1.2 3M License Agreement

1. Click the license agreement checkbox to acknowledge agreement with the license terms.
2. Click **Next** to continue.



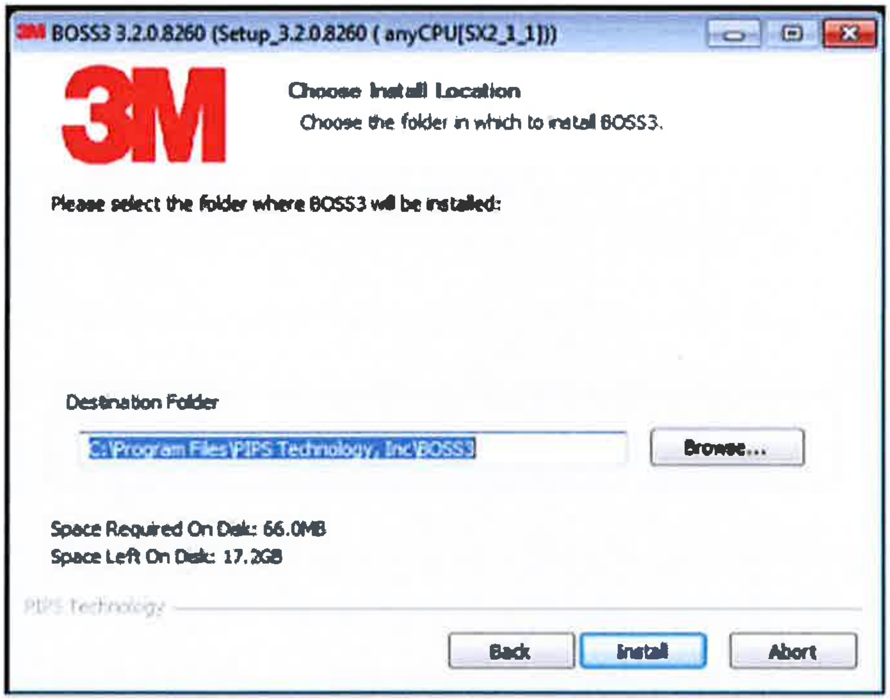
17.1.3 Selecting the Installed Components

1. Check the box for each component you wish to install for BOSS 3.2.
   - Runtime Environment (required)
   - Server Components (required)
   - Shortcuts (optional)
2. Click **Next** to continue.

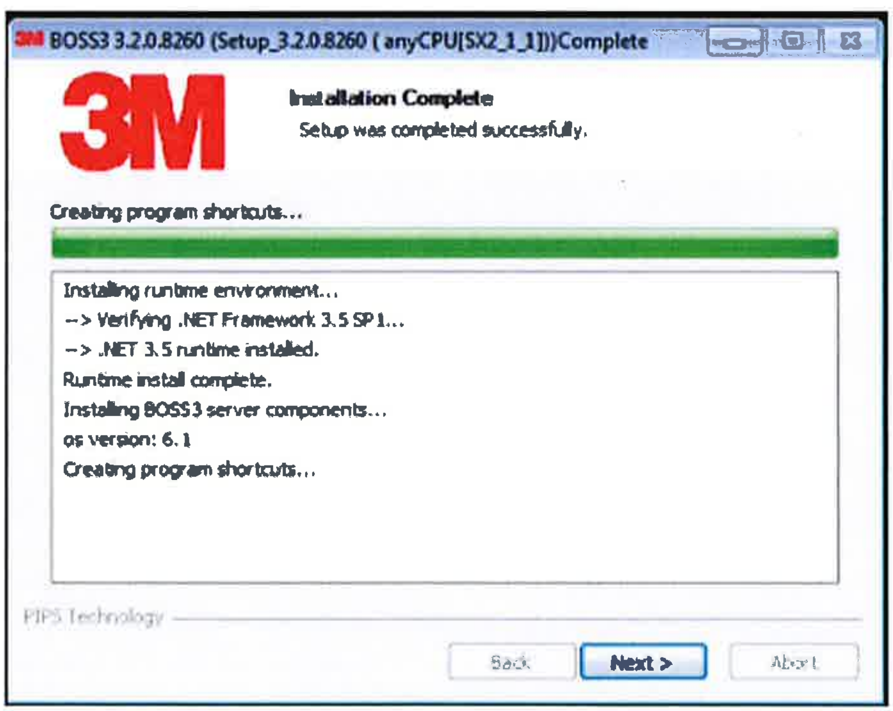


17.1.4 Selecting the Installation Folder

1. Select the location to install BOSS 3.2 by browsing your drive or typing a location.

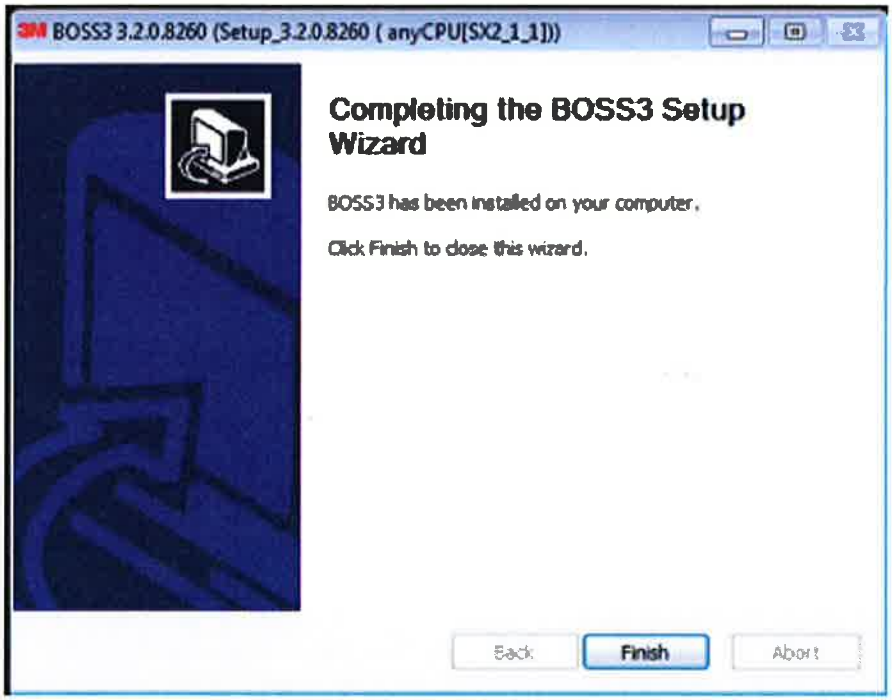


2. Click **Install.** The installation will then commence.



17.1.4 Selecting the Installation Folder *(continued)*

3. When the Installation Complete message is displayed, click **Finish** to proceed to the Licensing Wizard.

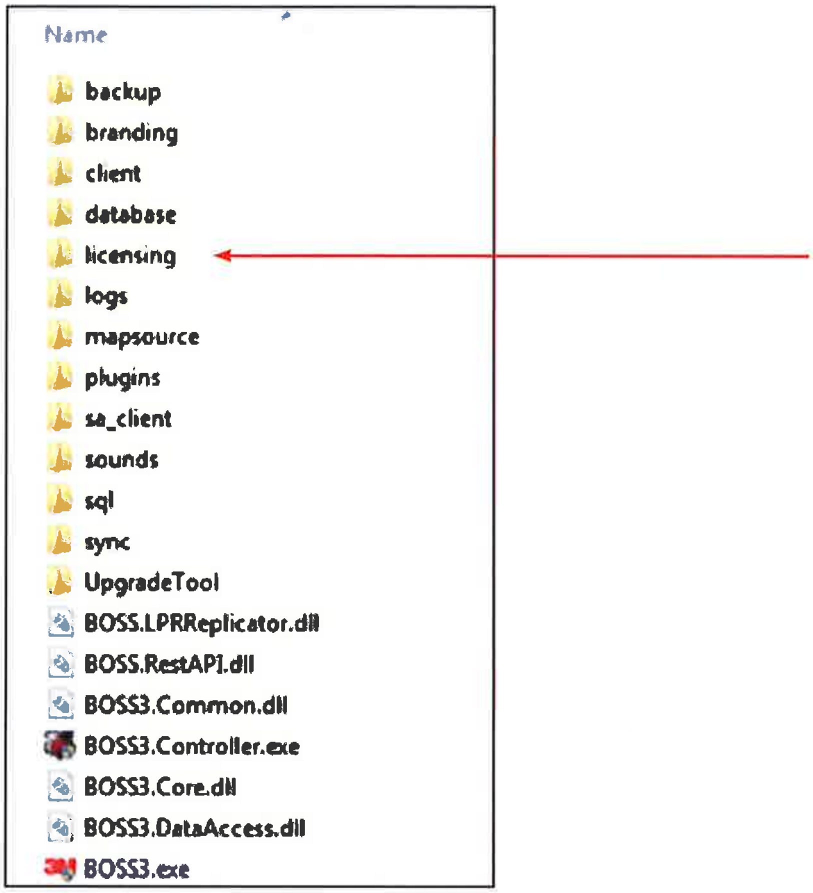


17.2 BOSS Version 3.2 and Above License Key Management

17.2.1 Activating the License Key

Following a new installation, a valid BOSS 3.2 license key must be entered. There are three options available discussed in the sections below that can be used to activate the license.

1. Navigate to the licensing folder in the BOSS 3.2 installation folder.



2. Start Microsoft License Manager (**Microsoft.Licensing.LicAdmin.exe**). This must be run as an Administrator.
3. In the License Manager User interface, select **File → Activation Wizard** to install the new license.
4. When the Activation Wizard dialog opens select one of the following:
    a. I want to activate the software over the Internet. *See Section 17.2.1.1.*

    or

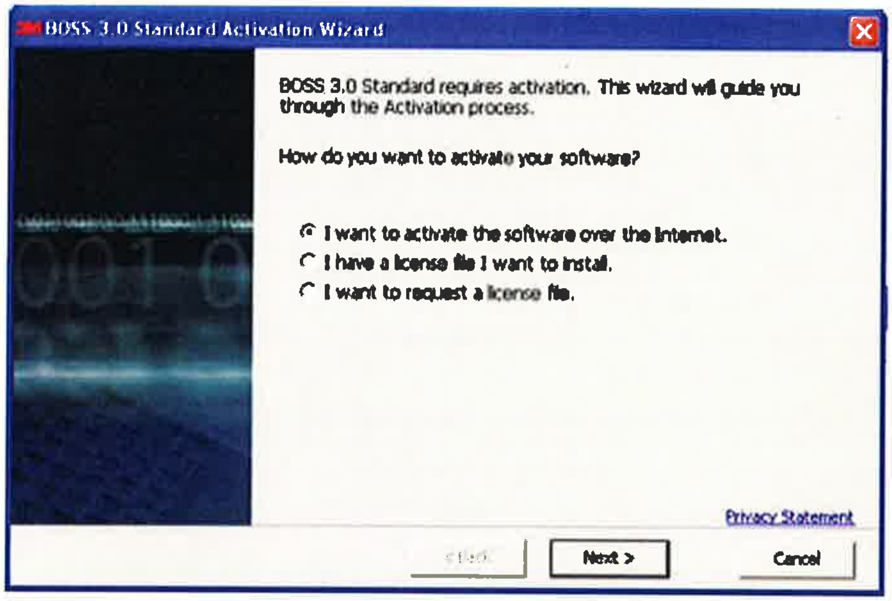
    b. I have a license file I want to install. *See Section 17.2.1.2.*

    or

    c. I want to request a license file. *See Section 17.2.1.3.*

17.2.1.1 Activating the License Key over the Internet

1. Check **I want to activate the software over the Internet**.
2. Click **Next** to continue.



3. Enter the activation key provided by 3M and click **Next.**

4. The license key will be activated over the Internet. The following screen will display. Click **Finish** to continue.

17.2.1.2 Activating the Software with a License File

1. Check **I have a license file I want to install.**
2. Click **Next** to continue.
3. Navigate to the location of the license file and select it.
4. Click **Next** to continue.
5. When the activation is completed click **Finish.**

17.2.1.3 Request a License File to Activate the License

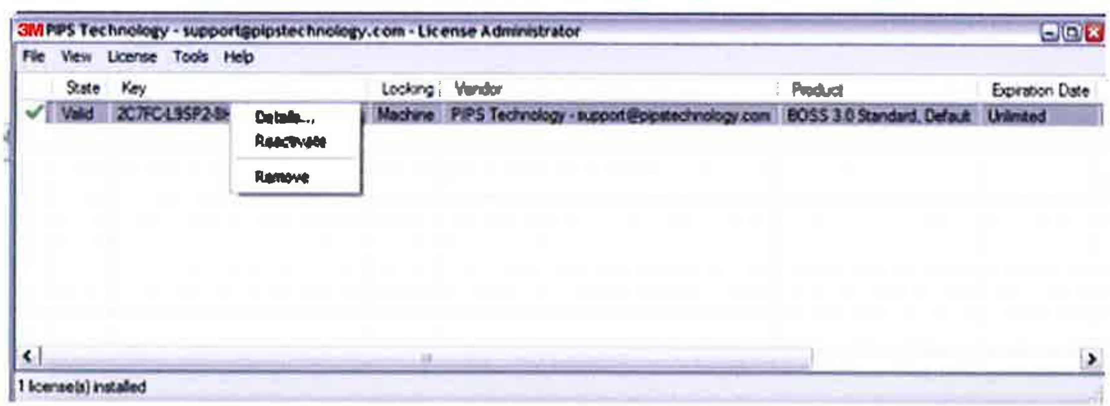
1. Click **I want to request a license file.** Press **Next.**
2. Enter the license key you received previously. Press **Next.**
3. In the screen that displays, copy the text block highlighted (starts with "—BEGIN Request") to the clipboard and paste it into an email. Send the email to 3M Technical Support (alprsupportus@mmm.com).
4. Close the Activation Wizard by clicking the **Finish** button.
5. You will be sent an activation file via email. Extract the license file (*.bin) and copy it to a folder on the computer where BOSS is installed. *Return to Section 17.2.2 and follow the steps to activate the license.*

17.2.2 Updating a License Key

If the BOSS license key becomes invalid, or if the license is upgraded, follow these steps to reactivate a BOSS license key:

1. Start Windows Explorer on the BOSS server.
2. Navigate to the folder where the BOSS server application is installed (by default C:\Program Files\PIPS Technology, Inc\BOSS3).
3. Locate the licensing folder as described in Section 17.2.1.
4. Open the folder and right click on the application **Microsoft.Licensing.LicAdmin.exe.** Select to run as the Administrator. You will see the following screen:

5. Select the license key. Right-click, and from the context menu, select **Reactivate.**



6. Click **Next.**
7. When the Installation Complete message is displayed, click **Finish.**

17.3 Map Display Options with BOSS

BOSS version 3.2 and above can display collected plate read information plotted on a map. There are two different mechanisms for displaying maps within the BOSS Smart Client application.

17.3.1 U.S. Census Bureau TIGER Maps

BOSS supports downloading U.S. Census Bureau Topologically Integrated Geographic Encoding and Referencing (TIGER) maps data into BOSS. This data is available free of charge within BOSS. TIGER maps will work without an Internet connection once the data has been downloaded.

TIGER maps cover the United States and its territories. Because these are very large data files, geographical coverage of a download should be limited to a few counties. Also, because of the limited nature of Census information, address search with TIGER maps is approximate (per census block). If more coverage or more accuracy is required, other mapping options should be considered. Satellite imagery is not available with TIGER maps.

17.3.2 Advanced Mapping with Microsoft Bing Maps

3M provides an option to purchase an "Advanced Mapping" feature with BOSS. This option enables integration of Microsoft Bing® Maps, an Internet-based service that BOSS can use to display maps in the Smart Client application.

Note: In order to use Advanced Mapping, the BOSS server and each Smart Client workstation will need an unimpeded Internet connection to Microsoft.com (no proxy servers). Bing Maps supports accurate address search and satellite imagery.

For more information about Bing Maps, please go to: http://www.bing.com/maps

17.4 Configuring the BOSS Server Application

After the BOSS version 3.2 or above installation is completed, the application must be configured using the BOSS Controller program. The following sections explain how to use this program as well as the configuration settings that are available.

17.4.1 The BOSS Controller Application

17.4.1.1 Starting the Boss Controller

BOSS Controller (BOSS3.Controller.exe) is the application used to configure and control the BOSS service. The BOSS Controller is installed on the server computer along with the server application. After the installation is complete the Controller program will start automatically. If this is a new installation the license will need to be activated first. Choose to configure BOSS at a later time by clicking on **Cancel.**

The shortcut to the BOSS Controller program can be found on the desktop or in the All Programs → PIPS Technology → BOSS3 menu. Right-click on the Controller icon and select **Run As Administrator.** When the BOSS Controller program is started an icon for the application will appear in the Windows System Tray at the lower right corner of the desktop.

17.4.1.2 Status Colors

The icon for the Controller program includes a "traffic light" that uses a color indicator to show the status of the BOSS service application. When the BOSS service application is running, the indicator is green. When the BOSS service application is not running, the indicator is red. Yellow color indicates that the application is changing state (starting or stopping).

17.4.1.3 Right-Click Menu

When you right-click the BOSS Controller System Tray icon, a pop-up menu will appear:

Start	Start the BOSS service.
Stop	Stop the BOSS service.
Configure	Present the BOSS Configuration Wizard.
Exit	Close the BOSS Controller application. (**Note:** This closes the BOSS Controller program, but does not stop the BOSS Service.)

17.4.1.4 Starting the BOSS Service

When the **Start** action is selected, and the service starts successfully, a Success message will be displayed:

The traffic light in the BOSS Controller icon will turn green to indicate the status.

17.4.1.5 Stopping the BOSS Service

When the **Stop** action is selected, and the service stops successfully, another Success message will be displayed, and the traffic light changes to red:

17.4.2 BOSS Configuration

17.4.2.1 Activating the Configuration Wizard

If this is a new installation of the BOSS application, the Configuration Wizard will automatically display after the installation of the files is complete.

If the BOSS Configuration Wizard is displayed, go to Section 19.4.2.2, BOSS Configuration Wizard. If the Configuration Wizard is not displayed:

1. Right-click the **Controller System Tray** icon.
2. Select the **Configure** option. The Configuration Wizard options are explained in the following sections.

17.4.2.2 BOSS Configuration Wizard

Step through all configuration screens in the BOSS Configuration Wizard by simply clicking the **Next** button on this first screen. Click **Next** on each subsequent screen after entering in the desired settings. **Note:** This step-by-step process is recommended when you are configuring the system for the first time.

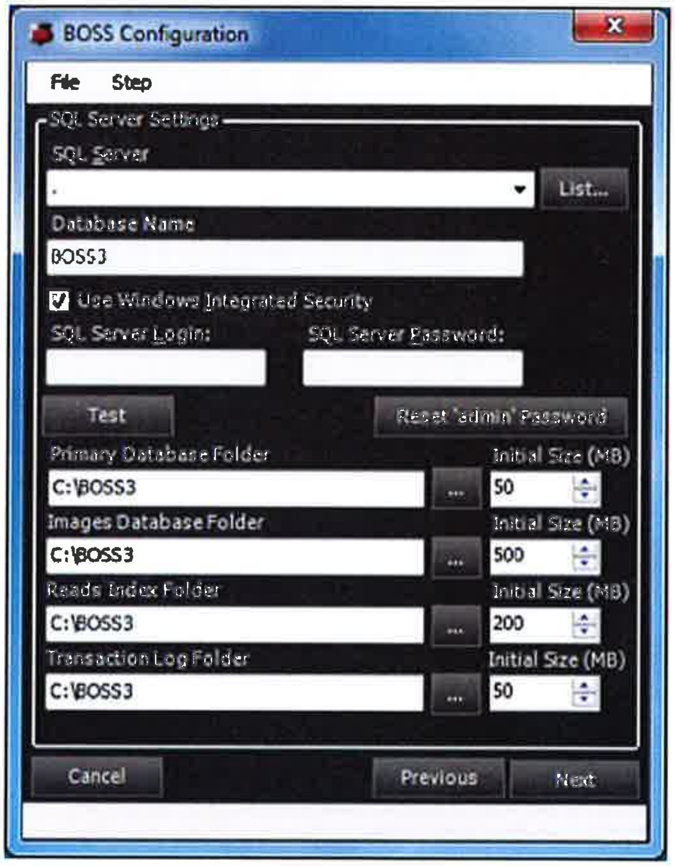
OR

Click the **Step** menu option to access the configuration menu and proceed to the step choice.

For each configuration step (described in Sections 17.4.2.3 – 17.4.2.9), clicking **Next** will take you to the next configuration screen, clicking **Previous** will take you to the previous one, and clicking **Cancel** will clear any changes you have made on the current screen.

17.4.2.3 SQL Server Configuration

SQL Server configuration is required for a new BOSS system, in order to specify the location and necessary authentication information for the SQL database.



SQL Server – Select the SQL Server 2008 instance for BOSS. Press **List** to choose from a list of available SQL Servers. The SQL Server Browser service must be running at this point. You may also type in the server IP address or host name. Enter a dot "." to use a local SQL Server that is running on the same machine as the BOSS service.

Use Windows Integrated Security – If checked, BOSS will use Windows Integrated Security to access the SQL Server database.

SQL Server Login and SQL Server Password – If Windows Integrated Security is not selected, enter the SQL Server username and password provided for BOSS to use to access the database.

Test – The **Test** button can be used to test the SQL Server settings currently in place. The **Test** button initiates a connection. A message box will appear to indicate whether the test connection fails or succeeds.

BOSS requires approximately 1 GB of hard drive space per 20,000 reads. In order to improve performance, the BOSS database can be divided among multiple locations as follows:

Primary Database Folder – The drive and folder where the BOSS primary database will reside

Images Database Folder – The drive and folder where the BOSS will store images

Reads Index Folder – The drive and folder where BOSS will store database indices for stored plate reads

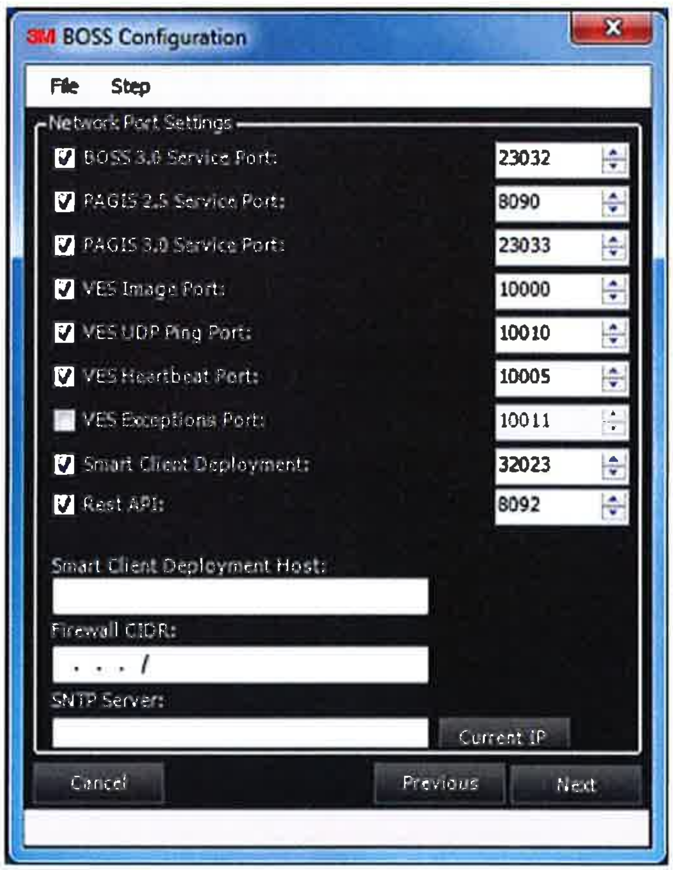
Transaction Log Folder – The drive and folder where BOSS will store the database transaction log file

17.4.2.4 Resetting the Administrator Password

If you have forgotten the BOSS administrator (admin) password, you can press the **Reset 'admin' password** button to reset the password to "admin1."

Pressing **Yes** will immediately reset the password.

17.4.2.5 Network Port Settings



BOSS uses a number of TCP/IP and UDP network ports for communication between server and client applications and server and license plate reading devices.

17.4.2.5 Network Port Settings *(continued)*

FIELD	DESCRIPTION	DEFAULT PORT
BOSS 3.0 Service Port	TCP/IP port used to provide access for BOSS Smart Clients	23032
PAGIS 2.5 Service Port	TCP/IP port used to provide access for LPCS (formerly PAGIS) for older mobile client versions	8090
PAGIS 3.0 Service Port	TCP/IP port used to provide access to various mobile client versions	23033
VES Image Port	TCP/IP port used to receive reads from 3M fixed cameras	10000
VES UDP Ping Port	UDP port used to receive keep alive ping messages from 3M fixed cameras	10010
VES Heartbeat Port	TCP/IP port used to receive heartbeat status messages from 3M fixed cameras	10005
VES Exceptions Port	TCP/IP port used to receive exceptions messages from 3M fixed cameras	10011
Smart Client Deployment	TCP/IP port used for BOSS client installations via BOSS server	32023
REST API Port	HTML port used for the communication between the BOSS service and newer versions of LPCS	8092

If the checkbox in front of the port name is left unchecked, the corresponding connection will be disabled.

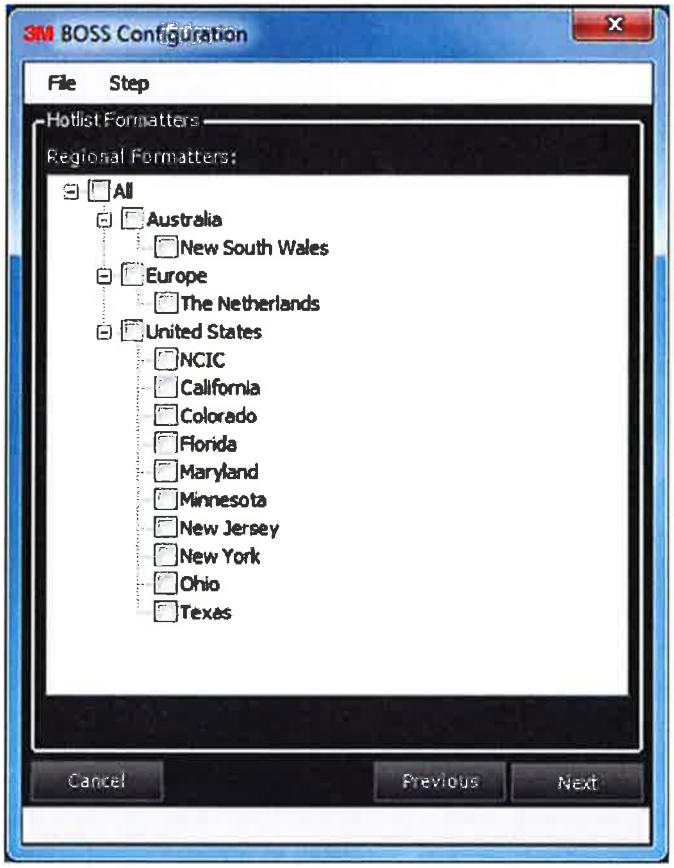
Smart Client Deployment Host – If this information is entered, BOSS Smart Clients will use the given hostname to distribute the smart client application. This can be left blank to use the local host name.

Firewall CIDR – BOSS provides a built-in firewall for incoming fixed camera connections. If a value is entered, only cameras with an IP address matching the CIDR will be allowed to connect. CIDR (Classless Inter-Domain Routing) is a standard industry method for specifying a range of included IP addresses. The format of the CIDR entry is A.B.C.D/N, in which the dotted decimal portion before the "/" is interpreted, like an IPv4 address, as a 32-bit binary number that has been broken into four octets. The value of N indicates the number of shared initial bits, counting from the left-hand side of the address.

For Example: For an entry of 10.200.200.255/24, the CIDR value 24 leaves 8 bits that can be changed. Therefore, addresses 10.200.200.x are permitted addresses.

SNTP Server – BOSS has a built-in time service. The 3M fixed ANPR/ALPR cameras do not support automatic daylight savings time (DST) adjustment. The BOSS time service provides a customized SNTP service for these cameras in order to support DST. To use the built-in time service, Windows Time Service has to be disabled in the Services Control panel, and the BOSS time server IP address entered in this field.

17.4.2.6 Regional Hotlist Formatters

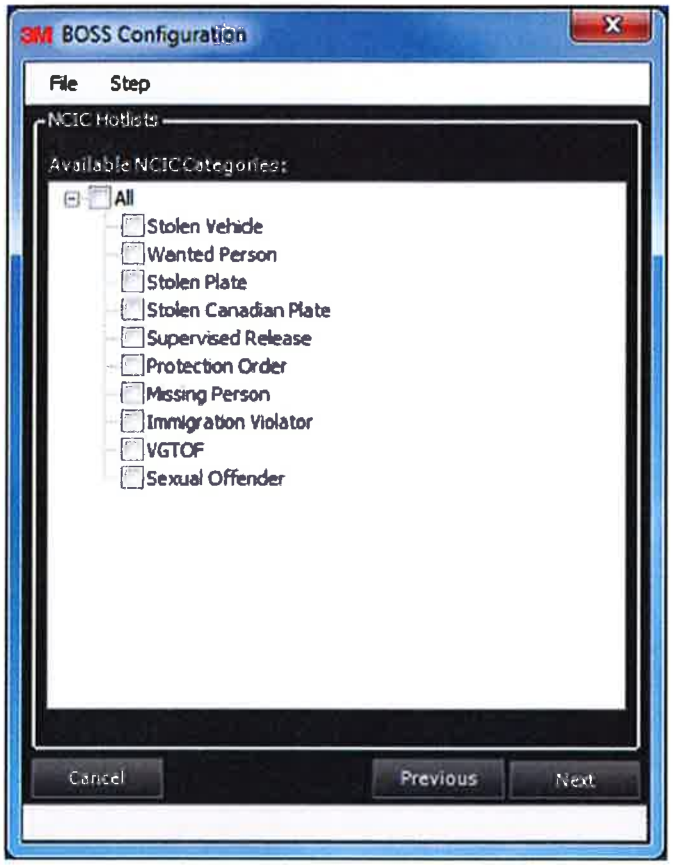


The BOSS 3.2 series allows the selection of predefined hotlist formatters. These formatters define the input format (structure) of hotlist data files. Custom formatters can be defined via the BOSS Smart Client application *(see Section 13 of this manual for more information).* Also, when installing BOSS in the United States, National Crime Information Center (NCIC) data formatters can be selected for specific states (see section following).

To select or unselect formatters, click on the formatter title to add or remove a check mark. Additional formatters can be added to a system as needed. These will be provided by 3M Technical Support upon request.

17.4.2.7 NCIC Hotlist Formatters

BOSS 3.2 and above supports hotlist import in the United States National Crime Information Center data format. This option is available only in the United States.



To configure formatters for the desired categories, check those categories.

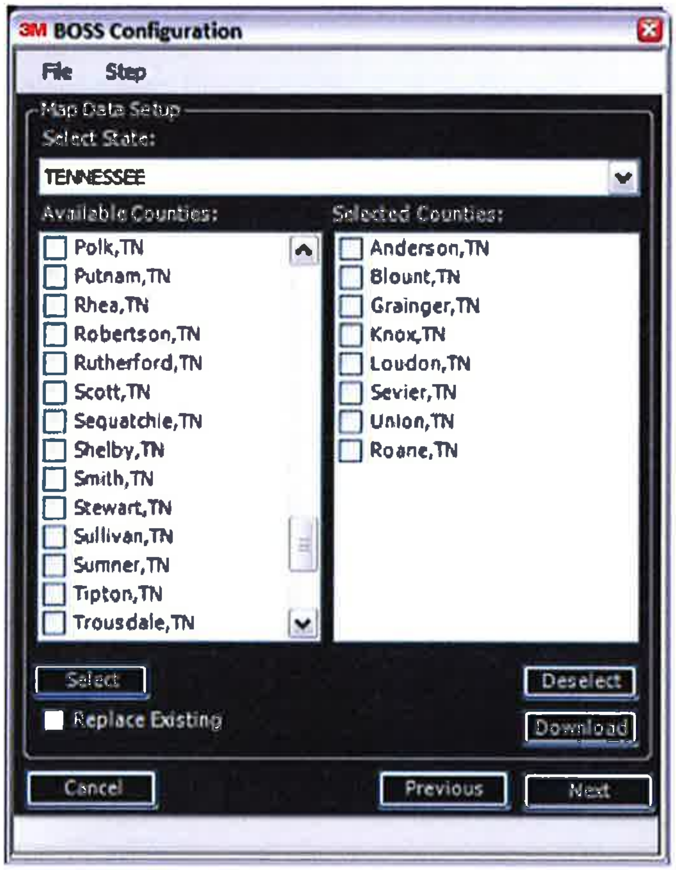
Once the desired categories have been selected, press **Next** to proceed.

17.4.2.8 TIGER Maps Configuration

BOSS 3.2 and above provides reporting on a map display by three alternative means. *See Section 17.3, Map Display Options with BOSS.* This option is available only in the United States.

Note: This section of configuration needs only be completed if U.S. Census Bureau TIGER maps are used.

BOSS provides for automated download of map data from the U.S. Census Bureau website. The U.S. Census Bureau offers yearly updated geographical information free of charge. In order to use TIGER maps, the BOSS server will need an established connection to the Internet **during the map download**. After the maps have been downloaded, the Internet connection is no longer needed.



To configure new maps for download:

1. Select the desired state from the drop-down menu. A list of counties for the selected state will appear.

2. Check the desired counties and click **Select.** Counties from multiple states can be selected

OR

3. Check undesired counties and click **Deselect.**

Once the desired counties have been selected:

4. Click **Download** to start the download process. BOSS will connect the U.S. Census Bureau website and extract the desired county data sets.

17.4.2.8 TIGER Maps Configuration *(continued)*

To replace existing maps:

BOSS maintains a copy of downloaded counties. To start anew and download a fresh set of data, check **Replace Existing** before clicking the **Download** button.

The status bar will indicate the download and extraction progress.

Note: The U.S. Census Bureau geospatial database has certain omissions and deficiencies. For more information, please consult the TIGER maps website: https://www.census.gov/geo/maps-data/data/tiger-line.html

17.4.2.9 Finishing Configuration

Click **Finish** to complete configuration. BOSS will save the chosen configuration.

If U.S. Census Bureau TIGER maps were downloaded, BOSS will prepare the map package to download to the Smart Clients. This may take several minutes. Progress will be displayed in the status bar.

Once the configuration process is complete, the Configuration Wizard will close automatically. In order to put the changed configuration in effect, the BOSS service will need to be restarted.

17.5 Installing the BOSS Smart Client Application

17.5.1 Installation over the Web

To initiate a web installation on a workstation, start up Microsoft Internet Explorer and navigate to this web address: **http://{boss_server_IP_address}:32023/publish.htm**, where {boss_server_IP_address} is the address of the server running the BOSS server application.

For Example: To install the Smart Client on the BOSS server itself, navigate to http://127.0.0.1:32023/publish.htm. The installation webpage will be presented. The advantage of installing the Smart Client over a web browser is that the application will automatically check for updated versions every time it is started.

17.5.2 Stand-Alone Installation

The BOSS Smart Client is a zero-administration desktop application meant for administration of the BOSS server application and querying data collected in the BOSS database as described in this manual. The BOSS Smart Client is installed as a single executable program. This program can be copied to any Windows workstation, or to a shared network drive.

To install the stand-alone application:

5. Start Windows Explorer on the BOSS server.
6. Navigate to the folder where the BOSS server application is installed (**by default C:\Program Files\PIPS Technology, Inc\BOSS3**)
7. Locate folder **sa_client.**
8. Copy file **BOSS.UI.exe** to the workstation or shared network folder of choice.

17.6 Configuring Client Tools

Client Tools is used to transfer any files needed during an LPCS shift from BOSS to an LPCS system that is being run in the Disk Sync mode. *See Section 13, Client Tools, and the License Plate Capture Software User's Manual.*

Client Tools does not have a customary interface. Once the utility is started, the Client Tools icon will appear in the Windows System Tray.

Before use, Client Tools must be configured and can be quickly completed with the simple configuration wizard provided:

1. To start the wizard, right-click the icon and select **Configure.** The initial screen provides information about the tool.
2. Click **Next** to continue the configuration, or **Cancel** to exit the wizard.
3. Enter a path so that Client Tools knows where to store the files it creates and where to look for files to process. This path can be a local, network, or external drive. Enter the path or click on the **...** button and browse to the location.
4. If the Begin Shift files that Client Tools creates need to be encrypted, click **Encrypt Output.** Click **Previous** to return to the previous screen, or click **Next** to continue.
5. The data used to create the Begin Shift files is created and managed in BOSS. Client Tools needs to know where the BOSS Server is located. Enter the server IP and the port to use to connect to it. Click **Previous** to return to the previous screen, or click **Next** to continue.
6. The final screen provides additional information on how to use the wizard. Click **Previous** to return to the previous screen, or click **Finish** to save the changes and exit.

17.7 The BOSS Upgrade Tool

If the BOSS application is upgraded to a newer version, the Upgrade Tool must be run before starting the BOSS Server. This tool is used to perform any database changes that may be necessary.

1. Navigate to the Upgrade tool. By default it is installed at **C:\Program Files (x86)\PIPS Technology, Inc\BOSS3\UpgradeTool.**
2. Right click on **BOSS3.UpgradeTool.exe** and select **Run as Administrator.**
3. When all processing is completed, click **Enter** to close the window.

18 Appendix: Troubleshooting

When troubleshooting an issue, always start by looking for error messages in the Server log file, usually found at ...\PIPS Technology, Inc\BOSS3\logs\BOSSServerLog.txt. Proceed based on the following information, recognizing that escalation may be necessary. If so, obtain a copy of the complete error message and include it with all escalated documentation.

ISSUE REPORTED	EXPLANATION	STEPS TO CORRECT
Just after an installation/upgrade, the UI won't start.	It takes several moments for the BOSS Server to be completely started and ready for information to be accessed.	After starting the BOSS server, wait for several moments before attempting to start the UI. If this is an upgrade this could be several minutes while the database is being updated.
I start the BOSS Controller, but it stops a moment later. The following error message may display "Error: Error in BOSS3 Controller. Please check the log files." (New installation scenario)	The license was not activated. When checking the BOSS Server Log, there will be two error messages : – 'Licensed for 0 concurrent clients' and – 'Failed to set registry parameter [_tmpbalikeda63] to value System.Byte[].'	Return to the licensing activation and updating checklist. *(See Section 17.2, BOSS Version 3.2 and Above License Key Management.)*
I start the BOSS Controller, but it stops a moment later. The following error message may display "Error: Error in BOSS3 Controller. Please check the log files." (Upgrade scenario)	The Upgrade Tool must be run before starting the Controller.	Run the Upgrade Tool. *(See Section 17.7 The BOSS Upgrade Tool.)*
I start the BOSS Controller, but it stops a moment later. The following error message may display "Error: Error in BOSS3 Controller. Please check the log files." (Other scenario)	If the Upgrade Tool has been run, there may be a problem with the database.	Look for error messages in the BOSS Server Log. Provide this information to Technical Support.
A fixed camera won't connect.	The firewall could be blocking the communications.	Ensure that the firewall is allowing communications through the VES ports, found in the BOSS Configuration Controller on the Ports screen.
LPCS won't connect.	The firewall could be blocking the communications.	– Ensure that the firewall is allowing communications through the REST API (for LPCS 2.7.x) and PAGIS 3.0 Service (for versions of LPCS) ports, found in the BOSS Configuration Controller on the Ports screen. – Ensure that the device has been enabled in the BOSS UI Devices screen.
Hotlist will not update.	There is typically a problem with the source file.	– If it is a network hotlist, ensure that the site can be reached by entering the address in a browser. – If a local hotlist, ensure that the file is on the system and can be opened.

ISSUE REPORTED	EXPLANATION	STEPS TO CORRECT
The NCIC Hotlist formatter that I need is not available. (New installation scenario)	The NCIC formatters were not added during the initial installation.	Stop the BOSS Service. Go to the Configure option on the BOSS Controller. Step to the NCIC screen. Select the desired NCIC formatters. Click **Save** and exit. Restart the BOSS Service. The formatters will now be available.
I am unable to see reads/hits in the Dispatch screen.	The time on the read/hit coming in must be relatively close, within a couple of minutes, to the BOSS server time.	For a mobile ALPR system, correct the time on the laptop or ALPR processor. A fixed camera can be configured to use a time server. If issue persists, the server that BOSS is running on could also be configured to sync with a time server.
An error message, "Compressed method not supported," was found in the BOSS Server Log.	There is a problem with a source file for one of the hotlist.	Ensure that the source file can be opened. If not, update it with one that can be opened.
An error message, "Transaction has aborted," was found in the BOSS Server Log.	There are various reasons that this message can occur.	Obtain a copy of the complete error message. Provide this information to Technical Support.
An error message. "Error #nn appeared in the db for Stored Procedure xxxx on line nn." was found in the BOSS Server Log.	An error occurred when running the stored procedure listed in the message.	Obtain a copy of the complete error message. Provide this information to Technical Support.
An error message, "Timeout expired. The timeout period elapsed prior to completion of the operation or the server is not responding," was found in the BOSS Server Log.	A SQL timeout error has occurred.	Obtain a copy of the complete error message. Provide this information to Technical Support.
An error message, "SNTP server not started, could not bind to InterNetwork 0.0.0.0:123," was found in the BOSS Server Log.	This is an expected error message that occurs when BOSS has not been configured to access a time server.	If no time server has been configured, this message can be ignored. If one has been configured, this needs to be escalated for further assistance.
After a new installation, the BOSS server stops running with an error message, "Failed in working with the database. Ensure connectivity is properly defined. Try running the BOSS Controller again and checking settings," was found in the BOSS Server Log.	When BOSS was started, there was a connection issue between it and the SQL Server.	Start by checking the information in the Controller. If that is all correct, then check to ensure that the SQL Server is running. If no issues are found there contact Technical Support Obtain a copy of the complete error message.
After a new installation, the BOSS Server stops with no error message in the BOSS Server Log.	The server needs to be run with Administrator privileges.	The server should be restarted in the Console as an Administrator. If running BOSS as a service then the BOSS Controller must be run as Administrator.
Error message in BOSS Server Log says that the file "httpconfig.exe" cannot be found.	This is an error that can occur when the system has not been updated in some time. It has been seen for other uncertain reasons as well.	Obtain a copy of the complete error message. Provide this information to Technical Support.

ISSUE REPORTED	EXPLANATION	STEPS TO CORRECT
After a new installation, the BOSS Server starts but stops moments later. The BOSS Server Log contains the error message. "The system cannot find the file specified Additional Exception Message: Unhandled exception from 'Name:BOSS3.exe. There are no context policies." However, no file is listed in the message.	This typically occurs on older systems, especially Windows Server 2003, or systems that have not been updated for a while.	The file **httpcfg.exe** needs to be copied into the c:\Windows\System32 directory.
The BOSS Server won't start, and there is an error message, "Transport Manager failed to listen on the supplied UIR using the NetTcpPortSharing service: failed to start the service because it is disabled," in the BOSS Server Log.	The NetTcpPortSharing Service is not running.	Obtain a copy of the complete error message. Provide this information to Technical Support.
The BOSS server stops running, and there is an error message, "Cannot open database "<Database Name>," in the BOSS Server Log.	There is an issue with the connection between the BOSS server and the SQL Server.	Start by checking the information in the Controller. If correct, then check to ensure that the SQL Server is running. If no issues are found contact Technical Support. Obtain a copy of the complete error message.
The BOSS Server won't start and there is an error message "A file activation error occurred. The physical file name '<filename>' may be incorrect." in the BOSS Server Log.	There could be multiple reasons, but it is probably due to a database connection issue.	Obtain a copy of the complete error message. Provide this information to Technical Support.
When running the upgrade tool, an error message is displayed. A message is included in the BOSS Server Log: "Current upgrade state: One of the upgrade scripts failed to run as expected. Please contact support for direction."	This most likely occurred due to upgrading from an old version of BOSS.	Obtain a copy of the complete error message. Provide this information to Technical Support.
An unexpected response or behavior occurs in BOSS, and there is an error message, "Object reference not set to an instance of an object," in the BOSS Server Log.	This is a generic error message that can occur for various reasons.	Unless the issue has an obvious cause contact Technical Support. Obtain a copy of the complete error message.
The following error message, "Discarding tmp buffer because it's corrupted," has been found in the BOSS Server Log.	This message is associated with a database issue.	Obtain a copy of the complete error message. Provide the information to Technical Support.
The following error message, "SMTP server is not defined, email alerts disabled," has been found in the BOSS Server Log.	This message is informational indicating, as it states, that an email server has not been configured.	If attempts have been made to configure an email server and this error message occurs, recheck the settings and the server. If the error remains contact Technical Support.
The BOSS Service stops running, and the BOSS UI indicates that the server is not available. The following error message, "Cannot access a disposed object," is found in the BOSS UI Log.	This is an informational message provided by the UI confirming that it is no longer able to communicate with the BOSS server.	Restart the BOSS server and the BOSS UI will reconnect. If this does not correct the issue contact Technical Support.

ISSUE REPORTED	EXPLANATION	STEPS TO CORRECT
The following error message, "The socket connection was aborted," is found in the BOSS UI Log.	This is an informational message provided by the UI confirming that it is no longer able to communicate with the BOSS server.	Restart the BOSS server, and the BOSS UI will reconnect. If this does not correct the issue contact Technical Support.
A problem occurs while adding a hotlist and the following error message "Invalid object name '<hotlist name here>'," has been found in the BOSS Server Log.	This indicates that there is an issue with the hotlist formatter being used.	Confirm that the correct formatter is being used. If so, confirm the source file is formatted correctly. If so, contact Technical Support. Provide a copy of the full error message.
While installing BOSS, an error message displays: "Error opening file for writing: <File Name>."	This indicates that the application listed in the error message is still running.	Check the Windows System Tray for any BOSS applications still running on the system. Close the application(s) and continue the installation.
The BOSS applications are installed under one user, but are not found when another user logs in.	The application was not installed using administrative privileges.	The application will need to be uninstalled and reinstalled using administrative privileges.
While using Client Tools to create Begin Shift files, an error message displays: "Client has not been activated on the server."	Mobile devices must be enabled on BOSS to synchronize data to it. This message is displayed the first time that Client Tools is used to create Begin Shift files because it has not been enabled yet.	Configure Client Tools on BOSS *(see Section 17.6)* so that BOSS adds Client Tools as a device.
When using Client Tools to synchronize End Shift files to BOSS, the following error message displays: "Error: Could not find <file and path name>."	Client Tools was unable to find the End Shift files to be processed at the defined path.	Check that the location assigned for the End Shift file matches the location chosen when Client Tools was configured. If it does not, move the file to the configured location.

19 Appendix: Plug-Ins

BOSS allows the use of third-party code via a plug-in that serves the needs of BOSS customers with specific data requirements. Once a plug-in is created and compiled, a copy of the DLL and any other necessary files can be copied to the plug-ins directory under BOSS. BOSS will automatically detect the existence of the plug-in at that point and permit reads to be passed to the ReceiveData method of your plug-in.

The functions of the currently available BOSS plug-ins are described in Sections 19.1 and 19.2. For more information and guidance on installing a plug-in, contact 3M Technical Support for guidance.

19.1 The BOSS Truck Drayage Utility

Regulation of diesel-fueled heavy-duty trucks and a Drayage Truck Registry (DTR) were implemented by the California Air Resources Board (ARB) to help reduce both emissions from these vehicles and public exposure to contaminants in those emissions. Drayage trucks subject to regulation (Class 7 and Class 8) are registered and information about them is maintained on an ARB web service.

The Truck Drayage Utility is BOSS plug-in that provides access to the ARB web service. The utility is designed to contact the web service, retrieve data, and add it to a comma-separated values file. In BOSS, the Hotlist Administrator will then create a whitelist that uses this CSV file as the source file.

The connection to the ARB web service (managed by the Windows Task Scheduler) can be made once daily for a full download of the data, with subsequent connections allowed no more frequently then every 30 minutes for updates. This whitelist can then be deployed to a mobile or fixed camera in the monitored area. If a plate is read that is not included on the whitelist, a notification will be displayed in BOSS. Appropriate action can be taken at that time.

If the ARB web service is unavailable and downloads cannot be completed, the BOSS whitelist will not be updated. There will also be warning messages in the BOSS log such as "Could not connect to <web service address>. TCP error code nnnnn: <Error description>." If this occurs, the utility will try again in 30 minutes. If the errors persist, it may be necessary to seek assistance.

19.2 The BOSS LPRD Plug-in

The BOSS LPRD plug-in relays the reads the BOSS server receives on to the national database at the Automated Regional Justice Information System (ARJIS), a joint powers agency that facilitates information-sharing among more than 70 law enforcement agencies—local, state, and federal—in the two California counties (San Diego and Imperial) that border Mexico. ARJIS operates a secure intranet (ARJISnet) with more than 11,000 users in San Diego County alone.

19.3 The BOSS DEA Plug-in

The BOSS DEA plug-in writes LPR messages to the file system as reads are received by the BOSS server. Those files will then be available for the Drug Enforcement Agency, DEA, File Transporter to act upon.

20 Appendix: GNU Lesser General Public License

Version 2. 1, February 1999

Preamble

The licenses for most software are designed to take away your freedom to share and change it. By contrast, the GNU General Public Licenses are intended to guarantee your freedom to share and change free software—to make sure the software is free for all its users.

This license, the Lesser General Public License, applies to some specially designated software packages—typically libraries—of the Free Software Foundation and other authors who decide to use it. You can use it too, but we suggest you first think carefully about whether this license or the ordinary General Public License is the better strategy to use in any particular case, based on the explanations below.

When we speak of free software, we are referring to freedom of use, not price. Our General Public Licenses are designed to make sure that you have the freedom to distribute copies of free software (and charge for this service if you wish); that you receive source code or can get it if you want it; that you can change the software and use pieces of it in new free programs; and that you are informed that you can do these things.

To protect your rights, we need to make restrictions that forbid distributors to deny you these rights or to ask you to surrender these rights. These restrictions translate to certain responsibilities for you if you distribute copies of the library or if you modify it.

For example, if you distribute copies of the library, whether gratis or for a fee, you must give the recipients all the rights that we gave you. You must make sure that they, too, receive or can get the source code. If you link other code with the library, you must provide complete object files to the recipients, so that they can relink them with the library after making changes to the library and recompiling it. And you must show them these terms so they know their rights.

We protect your rights with a two-step method: (1) we copyright the library, and (2) we offer you this license, which gives you legal permission to copy, distribute and/or modify the library.

To protect each distributor, we want to make it very clear that there is no warranty for the free library. Also, if the library is modified by someone else and passed on, the recipients should know that what they have is not the original version, so that the original author's reputation will not be affected by problems that might be introduced by others.

Finally, software patents pose a constant threat to the existence of any free program. We wish to make sure that a company cannot effectively restrict the users of a free program by obtaining a restrictive license from a patent holder. Therefore, we insist that any patent license obtained for a version of the library must be consistent with the full freedom of use specified in this license.

Most GNU software, including some libraries, is covered by the ordinary GNU General Public License. This license, the GNU Lesser General Public License, applies to certain designated libraries, and is quite different from the ordinary General Public License. We use this license for certain libraries in order to permit linking those libraries into non-free programs.

When a program is linked with a library, whether statically or using a shared library, the combination of the two is legally speaking a combined work, a derivative of the original library. The ordinary General Public License therefore permits such linking only if the entire combination fits its criteria of freedom. The Lesser General Public License permits more lax criteria for linking other code with the library.

We call this license the "Lesser" General Public License because it does Less to protect the user's freedom than the ordinary General Public License. It also provides other free software developers Less of an advantage over competing non-free programs. These disadvantages are

the reason we use the ordinary General Public License for many libraries. However, the Lesser license provides advantages in certain special circumstances.

For example, on rare occasions, there may be a special need to encourage the widest possible use of a certain library, so that it becomes a de-facto standard. To achieve this, non-free programs must be allowed to use the library. A more frequent case is that a free library does the same job as widely used non-free libraries. In this case, there is little to gain by limiting the free library to free software only, so we use the Lesser General Public License.

In other cases, permission to use a particular library in non-free programs enables a greater number of people to use a large body of free software. For example, permission to use the GNU C Library in non-free programs enables many more people to use the whole GNU operating system, as well as its variant, the GNU/Linux operating system.

Although the Lesser General Public License is Less protective of the users' freedom, it does ensure that the user of a program that is linked with the Library has the freedom and the wherewithal to run that program using a modified version of the Library.

The precise terms and conditions for copying, distribution and modification follow. Pay close attention to the difference between a "work based on the library" and a "work that uses the library". The former contains code derived from the library, whereas the latter must be combined with the library in order to run.

GNU LESSER GENERAL PUBLIC LICENSE
TERMS AND CONDITIONS FOR COPYING, DISTRIBUTION AND MODIFICATION

0. This License Agreement applies to any software library or other program which contains a notice placed by the copyright holder or other authorized party saying it may be distributed under the terms of this Lesser General Public License (also called "this License"). Each licensee is addressed as "you".

A "library" means a collection of software functions and/or data prepared so as to be conveniently linked with application programs (which use some of those functions and data) to form executables.

The "Library", below, refers to any such software library or work which has been distributed under these terms. A "work based on the Library" means either the Library or any derivative work under copyright law: that is to say, a work containing the Library or a portion of it, either verbatim or with modifications and/or translated straightforwardly into another language. (Hereinafter, translation is included without limitation in the term "modification".)

"Source code" for a work means the preferred form of the work for making modifications to it. For a library, complete source code means all the source code for all modules it contains, plus any associated interface definition files, plus the scripts used to control compilation and installation of the library.

Activities other than copying, distribution and modification are not covered by this License; they are outside its scope. The act of running a program using the Library is not restricted, and output from such a program is covered only if its contents constitute a work based on the Library (independent of the use of the Library in a tool for writing it). Whether that is true depends on what the Library does and what the program that uses the Library does.

1. You may copy and distribute verbatim copies of the Library's complete source code as you receive it, in any medium, provided that you conspicuously and appropriately publish on each copy an appropriate copyright notice and disclaimer of warranty; keep intact all the notices that refer to this License and to the absence of any warranty; and distribute a copy of this License along with the Library.

You may charge a fee for the physical act of transferring a copy, and you may at your option offer warranty protection in exchange for a fee.

2. You may modify your copy or copies of the Library or any portion of it, thus forming a work based on the Library, and copy and distribute such modifications or work under the terms of Section 1 above, provided that you also meet all of these conditions:

a. The modified work must itself be a software library.

b. You must cause the files modified to carry prominent notices stating that you changed the files and the date of any change.

c. You must cause the whole of the work to be licensed at no charge to all third parties under the terms of this License.

d. If a facility in the modified Library refers to a function or a table of data to be supplied by an application program that uses the facility, other than as an argument passed when the facility is invoked, then you must make a good faith effort to ensure that, in the event an application does not supply such function or table, the facility still operates, and performs whatever part of its purpose remains meaningful.

(For example, a function in a library to compute square roots has a purpose that is entirely well-defined independent of the application. Therefore, Subsection 2d requires that any application-supplied function or table used by this function must be optional: if the application does not supply it, the square root function must still compute square roots.)

These requirements apply to the modified work as a whole. If identifiable sections of that work are not derived from the Library, and can be reasonably considered independent and separate works in themselves, then this License, and its terms, do not apply to those sections when you distribute them as separate works. But when you distribute the same sections as part of a whole which is a work based on the Library, the distribution of the whole must be on the terms of this License, whose permissions for other licensees extend to the entire whole, and thus to each and every part regardless of who wrote it.

Thus, it is not the intent of this section to claim rights or contest your rights to work written entirely by you; rather, the intent is to exercise the right to control the distribution of derivative or collective works based on the Library.

In addition, mere aggregation of another work not based on the Library with the Library (or with a work based on the Library) on a volume of a storage or distribution medium does not bring the other work under the scope of this License.

3. You may opt to apply the terms of the ordinary GNU General Public License instead of this License to a given copy of the Library. To do this, you must alter all the notices that refer to this License, so that they refer to the ordinary GNU General Public License, version 2, instead of to this License. (If a newer version than version 2 of the ordinary GNU General Public License has appeared, then you can specify that version instead if you wish.) Do not make any other change in these notices.

Once this change is made in a given copy, it is irreversible for that copy, so the ordinary GNU General Public License applies to all subsequent copies and derivative works made from that copy.

This option is useful when you wish to copy part of the code of the Library into a program that is not a library.

4. You may copy and distribute the Library (or a portion or derivative of it, under Section 2) in object code or executable form under the terms of Sections 1 and 2 above provided that you accompany it with the complete corresponding machine-readable source code, which must be distributed under the terms of Sections 1 and 2 above on a medium customarily used for software interchange.

If distribution of object code is made by offering access to copy from a designated place, then offering equivalent access to copy the source code from the same place satisfies the requirement to distribute the source code, even though third parties are not compelled to copy the source along with the object code.

5. A program that contains no derivative of any portion of the Library, but is designed to work with the Library by being compiled or linked with it, is called a "work that uses the Library". Such a work, in isolation, is not a derivative work of the Library, and therefore falls outside the scope of this License.

However, linking a "work that uses the Library" with the Library creates an executable that is a derivative of the Library (because it contains portions of the Library), rather than a "work that uses the library". The executable is therefore covered by this License. Section 6 states terms for distribution of such executables.

When a "work that uses the Library" uses material from a header file that is part of the Library, the object code for the work may be a derivative work of the Library even though the source code is not. Whether this is true is especially significant if the work can be linked without the Library, or if the work is itself a library. The threshold for this to be true is not precisely defined by law.

If such an object file uses only numerical parameters, data structure layouts and accessors, and small macros and small inline functions (ten lines or less in length), then the use of the object file is unrestricted, regardless of whether it is legally a derivative work. (Executables containing this object code plus portions of the Library will still fall under Section 6.)

Otherwise, if the work is a derivative of the Library, you may distribute the object code for the work under the terms of Section 6. Any executables containing that work also fall under Section 6, whether or not they are linked directly with the Library itself.

6. As an exception to the Sections above, you may also combine or link a "work that uses the Library" with the Library to produce a work containing portions of the Library, and distribute that work under terms of your choice, provided that the terms permit modification of the work for the customer's own use and reverse engineering for debugging such modifications.

You must give prominent notice with each copy of the work that the Library is used in it and that the Library and its use are covered by this License. You must supply a copy of this License. If the work during execution displays copyright notices, you must include the copyright notice for the Library among them, as well as a reference directing the user to the copy of this License. Also, you must do one of these things:

a. Accompany the work with the complete corresponding machine-readable source code for the Library including whatever changes were used in the work (which must be distributed under Sections 1 and 2 above); and, if the work is an executable linked with the Library, with the complete machine-readable "work that uses the Library", as object code and/or source code, so that the user can modify the Library and then relink to produce a modified executable containing the modified Library. (It is understood that the user who changes the contents of definitions files in the Library will not necessarily be able to recompile the application to use the modified definitions.)

b. Use a suitable shared library mechanism for linking with the Library. A suitable mechanism is one that (1) uses at run time a copy of the library already present on the user's computer system, rather than copying library functions into the executable, and (2) will operate properly with a modified version of the library, if the user installs one, as long as the modified version is interface-compatible with the version that the work was made with.

c. Accompany the work with a written offer, valid for at least three years, to give the same user the materials specified in Subsection 6a, above, for a charge no more than the cost of performing this distribution.

d. If distribution of the work is made by offering access to copy from a designated place, offer equivalent access to copy the above specified materials from the same place.

e. Verify that the user has already received a copy of these materials or that you have already sent this user a copy.

For an executable, the required form of the "work that uses the Library" must include any data and utility programs needed for reproducing the executable from it. However, as a special exception, the materials to be distributed need not include anything that is normally distributed (in either source or binary form) with the major components (compiler, kernel, and so on) of the operating system on which the executable runs, unless that component itself accompanies the executable.

It may happen that this requirement contradicts the license restrictions of other proprietary libraries that do not normally accompany the operating system. Such a contradiction means you cannot use both them and the Library together in an executable that you distribute.

7. You may place library facilities that are a work based on the Library side-by-side in a single library together with other library facilities not covered by this License, and distribute such a combined library, provided that the separate distribution of the work based on the Library and of the other library facilities is otherwise permitted, and provided that you do these two things:

a) Accompany the combined library with a copy of the same work based on the Library, uncombined with any other library facilities. This must be distributed under the terms of the Sections above.

b) Give prominent notice with the combined library of the fact that part of it is a work based on the Library, and explaining where to find the accompanying uncombined form of the same work.

8. You may not copy, modify, sublicense, link with, or distribute the Library except as expressly provided under this License. Any attempt otherwise to copy, modify, sublicense, link with, or distribute the Library is void, and will automatically terminate your rights under this License. However, parties who have received copies, or rights, from you under this License will not have their licenses terminated so long as such parties remain in full compliance.

9. You are not required to accept this License, since you have not signed it. However, nothing else grants you permission to modify or distribute the Library or its derivative works. These actions are prohibited by law if you do not accept this License. Therefore, by modifying or distributing the Library (or any work based on the Library), you indicate your acceptance of this License to do so, and all its terms and conditions for copying, distributing or modifying the Library or works based on it.

10. Each time you redistribute the Library (or any work based on the Library), the recipient automatically receives a license from the original licensor to copy, distribute, link with or modify the Library subject to these terms and conditions. You may not impose any further restrictions on the recipients' exercise of the rights granted herein. You are not responsible for enforcing compliance by third parties with this License.

11. If, as a consequence of a court judgment or allegation of patent infringement or for any other reason (not limited to patent issues), conditions are imposed on you (whether by court order, agreement or otherwise) that contradict the conditions of this License, they do not excuse you from the conditions of this License. If you cannot distribute so as to satisfy simultaneously your obligations under this License and any other pertinent obligations, then as a consequence you may not distribute the Library at all. For example, if a patent license would not permit royalty-free redistribution of the Library by all those who receive copies directly or indirectly through you, then the only way you could satisfy both it and this License would be to refrain entirely from distribution of the Library.

If any portion of this section is held invalid or unenforceable under any particular circumstance, the balance of the section is intended to apply, and the section as a whole is intended to apply in other circumstances.

It is not the purpose of this section to induce you to infringe any patents or other property right claims or to contest validity of any such claims; this section has the sole purpose of protecting the integrity of the free software distribution system which is implemented by public license practices. Many people have made generous contributions to the wide range of software distributed through that system in reliance on consistent application of that system; it is up to the author/donor to decide if he or she is willing to distribute software through any other system and a licensee cannot impose that choice.

This section is intended to make thoroughly clear what is believed to be a consequence of the rest of this License.

12. If the distribution and/or use of the Library is restricted in certain countries either by patents or by copyrighted interfaces, the original copyright holder who places the Library under this License may add an explicit geographical distribution limitation excluding those countries, so that distribution is permitted only in or among countries not thus excluded. In such case, this License incorporates the limitation as if written in the body of this License.

13. The Free Software Foundation may publish revised and/or new versions of the Lesser General Public License from time to time. Such new versions will be similar in spirit to the present version, but may differ in detail to address new problems or concerns.

Each version is given a distinguishing version number. If the Library specifies a version number of this License which applies to it and "any later version", you have the option of following the terms and conditions either of that version or of any later version published by the Free Software Foundation. If the Library does not specify a license version number, you may choose any version ever published by the Free Software Foundation.

14. If you wish to incorporate parts of the Library into other free programs whose distribution conditions are incompatible with these, write to the author to ask for permission. For software which is copyrighted by the Free Software Foundation, write to the Free Software Foundation; we sometimes make exceptions for this. Our decision will be guided by the two goals of preserving the free status of all derivatives of our free software and of promoting the sharing and reuse of software generally.

NO WARRANTY

15. BECAUSE THE LIBRARY IS LICENSED FREE OF CHARGE, THERE IS NO WARRANTY FOR THE LIBRARY, TO THE EXTENT PERMITTED BY APPLICABLE LAW.

EXCEPT WHEN OTHERWISE STATED IN WRITING THE COPYRIGHT HOLDERS AND/OR OTHER PARTIES PROVIDE THE LIBRARY "AS IS" WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. THE ENTIRE RISK AS TO THE QUALITY AND PERFORMANCE OF THE LIBRARY IS WITH YOU. SHOULD THE LIBRARY PROVE DEFECTIVE, YOU ASSUME THE COST OF ALL NECESSARY SERVICING, REPAIR OR CORRECTION.

16. IN NO EVENT UNLESS REQUIRED BY APPLICABLE LAW OR AGREED TO IN WRITING WILL ANY COPYRIGHT HOLDER, OR ANY OTHER PARTY WHO MAY MODIFY AND/OR REDISTRIBUTE THE LIBRARY AS PERMITTED ABOVE, BE LIABLE TO YOU FOR DAMAGES, INCLUDING ANY GENERAL, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING OUT OF THE USE OR INABILITY TO USE THE LIBRARY (INCLUDING BUT NOT LIMITED TO LOSS OF DATA OR DATA BEING RENDERED INACCURATE OR LOSSES SUSTAINED BY YOU OR THIRD PARTIES OR A FAILURE OF THE LIBRARY TO OPERATE WITH ANY OTHER SOFTWARE), EVEN IF SUCH HOLDER OR OTHER PARTY HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

Glossary

Term	Definition
ALPR	Automatic license plate recognition (also called automatic number plate recognition, or ANPR)
Annotation	A note or comment that can be made about and added to a read.
Deployment	The distribution or making available of a hotlist to a device
Device	A source of ALPR data; an LPCS unit or a fixed or mobile camera
Disposition	The classification of a hit; e.g., a recovered stolen vehicle
Fixed Camera	An ALPR camera permanently mounted above a roadway
Group	A group of BOSS users that belong together administratively
Hit	A match on a plate read against a hotlist
Hotlist	A list or database of license plates of interest, e.g., the NCIC database
Justification	A purpose for running a query on the captured data. There are several justifications included in the system by default. The BOSS Administrator can also create custom justifications to be used.
LPN	License plate number; also known as the Vehicle Plate Number
LPCS	3M™ License Plate Capture Software, the ALPR Mobile application
Local Server	A server running on a local system, in relation to the SQL server or the BOSS UI
Misread	A read that was marked as a misread by a user
Mobile Unit	An ALPR system with cameras, a mobile processor, and software, such as 3M License Plate Capture Software, installed in a vehicle
Notification	Propagation or delivery of an alert resulting from a hit
Overview	A color image of the vehicle to which the license plate is attached
Patch	A small image of the license plate
Permission	Authorization to access specified functionality in BOSS
Read	A license plate detection event that results in the plate text optical recognition and pictures being taken
Remote Server	A BOSS server that is running in another location
Role	A position, such as Administrator, with the authorization to access specified functionality in BOSS
Site	A group of related devices
Translation	The interpretation from a word in English to a word in a selected language
User	An authorized BOSS user (with a username and password)
Whitelist	In BOSS a whitelist hit is the opposite of a hotlist hit. When a license plate read does not exist in an enabled whitelist database, the same Hits (Alert) screen will be displayed.

Index

3M

3M Traffic Safety and Security Division
3M Center
Building 235-3A-09
St. Paul, MN 55144 USA
Phone: 1-877-777-3571
Fax: 1-800-591-9293
Email: MVSSALPR@mmm.com
www.3M.com/mvss

75-0302-4350-7